

This electronic thesis or dissertation has been downloaded from the King's Research Portal at <https://kclpure.kcl.ac.uk/portal/>



## The Creation-Evolution Debate: An Islamic Perspective

Thomas, Paul

*Awarding institution:*  
King's College London

The copyright of this thesis rests with the author and no quotation from it or information derived from it may be published without proper acknowledgement.

### END USER LICENCE AGREEMENT



**Unless another licence is stated on the immediately following page** this work is licensed

under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International

licence. <https://creativecommons.org/licenses/by-nc-nd/4.0/>

You are free to copy, distribute and transmit the work

Under the following conditions:

- Attribution: You must attribute the work in the manner specified by the author (but not in any way that suggests that they endorse you or your use of the work).
- Non Commercial: You may not use this work for commercial purposes.
- No Derivative Works - You may not alter, transform, or build upon this work.

Any of these conditions can be waived if you receive permission from the author. Your fair dealings and other rights are in no way affected by the above.

### Take down policy

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

This electronic theses or dissertation has been downloaded from the King's Research Portal at <https://kclpure.kcl.ac.uk/portal/>



**Title:** The Creation-Evolution Debate: An Islamic Perspective

**Author:** Paul Thomas

The copyright of this thesis rests with the author and no quotation from it or information derived from it may be published without proper acknowledgement.

#### END USER LICENSE AGREEMENT



This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License. <http://creativecommons.org/licenses/by-nc-nd/3.0/>

You are free to:

- Share: to copy, distribute and transmit the work

Under the following conditions:

- Attribution: You must attribute the work in the manner specified by the author (but not in any way that suggests that they endorse you or your use of the work).
- Non Commercial: You may not use this work for commercial purposes.
- No Derivative Works - You may not alter, transform, or build upon this work.

Any of these conditions can be waived if you receive permission from the author. Your fair dealings and other rights are in no way affected by the above.

#### Take down policy

If you believe that this document breaches copyright please contact [librarypure@kcl.ac.uk](mailto:librarypure@kcl.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.

**THE CREATION-EVOLUTION DEBATE:**  
**An Islamic Perspective**

**PAUL THOMAS**

**A Dissertation submitted to King's College, London, University of London, in accordance  
with the requirements of the degree of PhD in Education in the Department of Education and  
Professional Studies**

**May 2012**

## **Abstract**

2009 marked the bicentennial of Charles Darwin's birth and the 150<sup>th</sup> anniversary of "On the Origin of the Species". Much has been written about the creationist views of fundamentalist Christians but relatively little about the creationist views of Muslims. The general aim of this study is to gain some insight into the worldview of British Muslims and the manner in which this informs the creation-evolution debate. Using semi-structured interviews, 25 (of whom 9 were females and 3 imams) candidates were interviewed between March and August, 2011. All interviewees had completed their GCSEs in the UK, and the majority were University graduates (17) based in London. The responses were considered in light of the theory of evolution as taught in Key Stage 4.

The responses show a remarkable degree of uniformity despite differences in ethnicity and education. 24 of the 25 respondents rejected the theory of evolution as a scientific theory. 17 individuals wished to see the cessation of the teaching of evolution in schools. Responses reveal some trepidation to the effect that Muslim children are deliberately targeted at a tender age to counter the creationist teachings inculcated at home. One of the main objections to the theory of evolution was their understanding of the word "theory". Their responses indicated that theory meant no more than conjecture. Emboldened by such an understanding, they felt strongly that creationism ought also to be presented as an alternative and competing theory in the science classroom. Furthermore, responses indicated a general dissatisfaction with the quality of teaching on the theory of evolution in schools. The interviewees alleged that the teaching was instrumentally tailored to meeting the syllabus stipulations and passing exams, but failed to grapple with ambivalent or dissident views. To their mind, variation and adaptation are integral to the process of evolution, but did not lead to speciation. The majority of the respondents saw a link between evolution and atheism. Statements made by high-profile scientists such as Dawkins confirm such assumptions, in their view.

## Acknowledgements

*Pigmaei gigantum humeris impositi plusquam ipsi gigantes vident*

Translation: ‘If I have seen further it is only by standing on the shoulders of giants.’ (Sir Isaac Newton to Robert Hooke, 5 Feb. 1676).

As with all such projects, this PhD dissertation is indebted to several individuals who played the role of intellectual provocateurs: the guidance and help of my supervisors Dr Philip Barnes and Professor Alister McGrath, the gatekeepers who were instrumental in the task of accessing the participants and the research participants themselves who gave me the honour of exploring the subject of this project. My supervisor, Dr Barnes, has always been approachable, responsive, honest, interested and supportive. I feel very fortunate to have been supervised by him.

Laurence Clark Powell astutely noted that a writer “...must be alone, uninterrupted and slightly savage if he is to sustain and complete an undertaking.” This has unfortunately been true for my long-suffering family who put up with my hermit-like existence and coped with the psychological absence. Without their patience this project would not have been completed.

I have benefited much from the published work of a plethora of scholars. Some of these debts will be visible in the bibliography section. I would like to take the opportunity to particularly thank, among others, Michael Reiss, Denis Alexander, Michael Ruse, John C. Lennox, Nidhal Guessoum and T. Shanavas whose publications on the creation-evolution debate I have found particularly inspiring. Special thanks goes to Mohamed Ali Adan whose assistance proved indispensable in more ways than one. Much needed cognitive dissonance was furnished by the very knowledgeable AbdulRazak Mohamed and Ahmed Omar Ali. Finally, I am grateful for the financial assistance given by the Norwegian State Educational Loan Fund. Without their support this project would not see the light of day.

## Select Glossary of foreign and technical terms

<b><i>Alim</i></b>	Islamic theologian, jurist, religious teacher.
<b><i>Burqa</i></b>	Complete covering for the female body.
<b><i>Dar al-harb</i></b>	House or land of war.
<b><i>Dar al-kufr</i></b>	House or land of unbelief.
<b><i>Fatwa</i></b>	Expert advice of a jurist on a specific legal problem. Such opinions usually involve the application of Islamic law to new and varied circumstances that arise in the Islamic community. They are often accorded a great deal of respect within the Islamic tradition, although their impact and extent of their acceptance are often dependent upon the perceived legal knowledge of the issuer.
<b><i>Fiqh</i></b>	Technical juristic elaboration of detailed content; science or discipline of Islamic law whereby legal opinions ( <i>fatwas</i> ) are derived from the Qur'an and the sayings of the Prophet Muhammad ( <i>hadith</i> ).
<b><i>Five Pillars of Islam</i></b>	The foundations of the religion of Islam. They are: 1. attesting to the Divine unity (there is no other god but God); 2. performing the ritual prayer ( <i>salat</i> ) five times daily; 3. paying the annual tithe ( <i>zakat</i> ) on one's wealth and possessions; 4. fasting during the month of Ramadan; and 5. performing the pilgrimage ( <i>hajj</i> ) to Mecca, if health and wealth permit.
<b><i>Hadith</i></b>	The collected sayings of the Prophet of Islam. The <i>hadith</i> , which comprise the Prophet's sayings, actions and tacit approvals, constitute the second most important source of Islamic teachings after the Qur'an, though in volume they far exceed the Qur'an.
<b><i>Ijma</i></b>	Consensus of the Muslim community on a particular legal issue. It is seen in most schools of Islamic law as one of the four primary sources of the <i>sharia</i> , along with the Qur'an, <i>sunna</i> , and <i>qiyas</i> .
<b><i>Ijtihad</i></b>	The exercise of human reason. A creative but disciplined intellectual effort to derive legal rulings for new situations from the accepted juridical sources of Islam. <i>Ijtihad</i> is not just one "religious" judgement among many, to be weighed against economic, political, and other judgements in deciding how to act; it is itself an "all-things-considered" ethical judgement based on spiritual principles, taking all other factors into account.
<b><i>Imam</i></b>	Religious leader, one who leads prayer in the mosque.
<b><i>Jihad</i></b>	Struggle, strenuous effort; the greater <i>jihad</i> is considered to be the struggle to overcome inner personal weaknesses while the armed struggle or "holy war" is the lesser <i>jihad</i> .
<b><i>Jinn</i></b>	Spirits created by God, some good and others evil.

<b><i>Kalam</i></b>	Seeks to define the articles of faith, but is mostly a polemical and at times apologetic discipline.
<b><i>Khalifa</i></b>	Vice-regent or representative of God. The Qur'an teaches that human beings were created to be God's vice-regents on earth. For many this refers to the proper role of the human being in relation to creation. In Islamic political thought, the <i>khalifas</i> or Caliphs are the vice-regents or the successors of the Prophets.
<b><i>Masjid</i></b>	Mosque.
<b><i>Madrassa</i></b>	Religious school.
<b><i>Qiyas</i></b>	Analogical reasoning as used in Islamic jurisprudence. It is understood in most schools of Islamic law to be one of the four primary sources of the <i>sharia</i> , along with the Qur'an, <i>sunna</i> , and <i>ijma</i> .
<b><i>Sharia</i></b>	The path to be followed; Islamic law.
<b><i>Shia</i></b>	Those belonging to the party of Ali; general name for all those Muslims who regard Ali, son-in-law and cousin of the Prophet Muhammad, and his descendants, as the only legitimate leaders of the Muslim community after Muhammad's death.
<b><i>Sufism</i></b>	Islamic mysticism.
<b><i>Sunna</i></b>	"The trodden path"; the practice and example of the Prophet Muhammad which Muslims should follow in order to live a correct life.
<b><i>Sunni</i></b>	Literally "one who follows the trodden path"; the majority community within Islam.
<b><i>Tawhid</i></b>	Literally "making one or asserting unity"; the cardinal Islamic doctrine of the unity of God.
<b><i>Ulama</i></b>	Plural of <i>alim</i> .
<b><i>Umma</i></b>	Community or people. A Qur'anic term used to refer to the various peoples and nations of the earth. The Qur'an states that God has sent a prophet to every <i>umma</i> , and it is understood in Islam that each prophet has his own <i>umma</i> , who follows his message.

## Table of Contents

<i>Abstract</i>	2
<i>Acknowledgements</i>	3
<i>Select Glossary of foreign and technical terms</i>	4
<i>List of tables and figures</i>	10

<b>CHAPTER ONE.</b>	<b>11</b>
<b>1. Introduction.</b>	<b>11</b>
<b>1.2. Islam in Britain.</b>	<b>14</b>
1.2.1 The rationale for Muslim schools.	18
1.2.2. Somali identity construction among the diaspora.	21
1.2.3. The debate and constructions of “blackness”	23
<b>1.3. Islam, science and evolution.</b>	<b>25</b>
1.3.1. The constriction of <i>ijtihad</i> .	27
1.3.2. The clash of trajectories.	29
<b>1.4. Islam and modernisation.</b>	<b>32</b>
1.4.1. The rise of modernism and the demise of religion.	34
1.4.2. Evolution, atheism and moral ambivalence.	37
<b>1.5. Aims and objectives of the study.</b>	<b>41</b>
 <b>CHAPTER TWO</b>	 <b>43</b>
<b>2.1. Beyond discourses of the “Other”</b>	<b>43</b>
<b>2.2. Evolutionary belief in the “Golden Age”</b>	<b>46</b>
2.2.1. Uniformitarianism and evolution	47
2.2.2. Science in the “Golden Age”	50
<b>2.3. The orthodox ascendancy and decline of science: <i>Fiqh</i> vs. <i>Falsafa</i>.</b>	<b>51</b>
2.3.1. Rational theology and the Mut’azilites.	52
2.3.2. Al-Ghazali and the rational philosophers.	55
<b>2.4. The controversy in the advent of modernity.</b>	<b>57</b>
2.4.1. Muslim theistic evolutionists.	58
2.4.2. Islamic creationism and the challenge of modernity.	60
2.4.3. Fundamentalism as a response to atheism.	64
<b>2.5. A clash of sciences? Parallels and points of departures.</b>	<b>66</b>
2.5.1. <i>Tawhid</i> and the limits of science.	68
2.5.2. The challenge of Cartesian epistemology.	71
2.5.3. “Islamic science?” Attempts to chart out a new course.	72



<b>CHAPTER THREE .....</b>	<b>75</b>
<b>3.0. Introduction .....</b>	<b>75</b>
<b>3.1. The Theory of evolution .....</b>	<b>76</b>
3.1.1. Evolution and ideological investments. ....	81
3.1.2. The Selfish Gene. ....	82
3.1.3. Chance and evolution. ....	83
3.1.4. Evolution as the “creation-myth” of our age .....	84
3.1.5. Darwin’s own faith. ....	85
<b>3.2. Creationism – the legacy of William Paley .....</b>	<b>87</b>
3.2.1. Henry Morris and the rise of modern creationism .....	89
3.2.2. Catastrophism and the fossil record. ....	92
3.2.3. A comparison with Islamic creationism .....	94
3.2.4. From Scopes to Kitzmiller vs. Dover. ....	97
<b>3.3. Scientific naturalism and scriptural literalism.....</b>	<b>100</b>
3.3.1. Privileging a discourse of scientific naturalism. ....	101
3.3.2. The unacknowledged faith of scientific naturalism.....	102
3.3.3. The rise of fundamentalism.....	104
3.3.4. The influence of Liberal theology on fundamentalism.....	106
 <b>CHAPTER FOUR.....</b>	 <b>109</b>
<b>4.0. Access, identification &amp; sample size .....</b>	<b>109</b>
<b>4.1. Official documents considered .....</b>	<b>112</b>
<b>4.2. Methodological considerations.....</b>	<b>113</b>
4.2.1. Critical realism. ....	116
4.2.2. A hermeneutical fusion of horizons .....	118
4.2.3. Hermeneutic phenomenology. ....	120
<b>4.3. “Quality” in interviewing.....</b>	<b>122</b>
4.3.1. Semi-structured interviews: between agency and structure.....	125
4.3.2. Some challenges with regard to method. ....	127
<b>4.4. Reflexivity.....</b>	<b>129</b>
4.4.1. Insider vs. Outsider.....	130
4.4.2. Dialogic typologies: An ethical response to the “Other”.....	131

<b>CHAPTER FIVE .....</b>	<b>135</b>
<b>5.0 Introduction.....</b>	<b>135</b>
<b>5.1. Background of the informants .....</b>	<b>136</b>
5.1.1 Ethnicity and education .....	136
5.1.2 Gender and education .....	138
5.1.3. Imams and lay members. ....	140
5.1.4. A conflict of loyalties?.....	145
<b>5.2. Documents shaping the debate.....</b>	<b>146</b>
5.2.1 The Science National Curriculum Key Stage 4 (2000-2006) .....	146
5.2.2 The Science National Curriculum Key Stage 4 (2006-2011) .....	148
<b>5.3. Evolution &amp; participants' views on home-schooling.....</b>	<b>150</b>
5.3.1 Exposure to evolution will develop critical thinking .....	150
5.3.2 All citizens must have the same education .....	151
5.3.3. No choice but to conform to UK standards .....	153
5.3.4. Those who opted for Muslim schools.....	154
<b>5.4. Conclusion .....</b>	<b>154</b>
 <b>CHAPTER SIX .....</b>	 <b>156</b>
<b>6.0. Introduction.....</b>	<b>156</b>
6.1. Defining the theory of evolution – interviewees' responses.....	156
6.1.2. Objections to humans evolving from apes .....	157
6.1.3. An unsubstantiated theory.....	162
6.1.4. Schools did not teach the theory properly.....	164
6.1.5 Responses of imams .....	166
<b>6.2 Should the theory of evolution be taught in schools? .....</b>	<b>168</b>
6.2.1 Equal time for creationism? Teaching the controversy .....	172
6.2.2. Questioning teachers' impartiality .....	173
<b>6.3 Religious education as the forum for the debate .....</b>	<b>174</b>
6.3.1 The debate in RE sends the wrong signal .....	174
6.3.2 The challenge from disparate creation accounts .....	176
6.3.3 Confront evolution at the source .....	177

<b>CHAPTER SEVEN.....</b>	<b>180</b>
<b>7.0 Introduction.....</b>	<b>180</b>
<b>7.1 Reconciling the Qur'an and science.....</b>	<b>181</b>
7.1.1 Privileging the Qur'an .....	181
7.1.2 A dominant literalist hermeneutic .....	183
7.1.3 Views of imams.....	185
<b>7.2 The Big Bang, Islam &amp; methodological naturalism .....</b>	<b>187</b>
7.2.1 God as necessary agent .....	187
7.2.3 The "Goldilocks enigma" .....	189
<b>7.3 Tawhid and non-overlapping magisteria .....</b>	<b>191</b>
7.3.1 Challenges of implementing <i>tawhid</i> .....	192
7.3.2 Arguments for the implementation of <i>tawhid</i> .....	194
7.4. Between Britain and Saudi Arabia .....	196
 <b>CHAPTER EIGHT .....</b>	 <b>198</b>
<b>8.0 Introduction.....</b>	<b>198</b>
<b>8.1 Evolution and atheism.....</b>	<b>199</b>
8.1.1 Conflating evolution with atheism .....	199
8.1.2 Decoupling atheism and Darwin .....	202
<b>8.2 "Survival of the fittest" .....</b>	<b>203</b>
8.2.1 Evolution and social Darwinism .....	204
8.2.2 Distinguishing between evolution and social Darwinism .....	207
<b>8.3 Evolution and racism .....</b>	<b>210</b>
8.3.1 Conflating evolution and racism .....	210
8.3.2 Rejecting any nexus between evolution and racism.....	213
<b>8.4. Responses of imams.....</b>	<b>215</b>
8.4.1 Evolution and atheism – imams' views. ....	216
8.4.2 Evolution and racism – the imam's views .....	218
 <b>CONCLUSION .....</b>	 <b>220</b>
 <i>Bibliography</i> .....	 226
<i>Appendices</i> .....	238

## **List of tables and figures**

<b>FIG.1.</b> ACCEPTANCE OF EVOLUTION IN SIX MUSLIM COUNTRIES	14
<b>TABLE 1.</b> DISTRIBUTION ACCORDING TO ETHNICITY AND EDUCATION LEVEL.	136
<b>TABLE 2.</b> GENDER PARTICIPATION AND EDUCATIONAL LEVEL	138
<b>TABLE 3.</b> DISTRIBUTION ACCORDING TO ETHNICITY & OCCUPATION.	140
<b>TABLE 4.</b> IMAMS AND LAY MEMBERS.	143
<b>FIG.6.1.</b> RESPONSES BASED ON 4 QUESTIONS PERTAINING TO THE TEACHING OF EVOLUTION IN SCHOOLS.	169

## CHAPTER ONE.

### 1. Introduction

This study is an attempt to explore the creationist views of Muslims in the UK in light of the theory of evolution. 2009 marked Darwin's bicentennial and the 150<sup>th</sup> anniversary of the publication of *The Origin of the Species* (1859). From a broader perspective, the aim is to gain some insight into the worldview of Muslims and the manner in which this informs the creation-evolution debate. The responses were compared with the statutory teaching aims of Darwin's theory of evolution as taught in Key Stage 4. Furthermore, the study seeks to understand the manner in which an Islamic worldview (*tawhid*) influences relevant offshoots such as the role of reason, democratic notions such as separation between church and state and the relation between science and faith, all of which, it is argued, have some significance when considering the subject at hand.

One of the most comprehensive studies commissioned by the DfES in 2003 (CREAM report) established "that over the years there has been almost no research regarding the position of Muslim pupils as Muslims, in the education system" (Coles, 2008:50). It is hoped this study will make a modest contribution to the manner in which Muslims reconcile their creationist views with the theory of evolution. In a broader sense, this study can be perceived as an invitation for a dialogue between "worldviews" by stimulating Muslim participants to reflect on areas of convergence and divergence.

Hameed (2008:1637) predicts that the next conflict over the theory of evolution after the USA will take place in countries with sizeable Muslim populations. He further states that relatively poor education standards coupled with a propensity to conflate evolution with atheism have had the regrettable effect of postponing a serious debate in the Muslim world. Why this issue should be of pressing concern in the West is aptly captured in the statement below:

Because of globalization and emigration, today the major cities where Muslims live are not only exotic-sounding places such as Cairo, Damascus, Baghdad, Mecca, Islamabad, and Kuala Lumpur, but also London, Paris, Marseilles, Brussels, New York, Detroit, and Los Angeles. The world's 1.3 billion Muslims live in some 57 countries with substantial or majority Muslim populations in Europe, North America, and across the world (Esposito and Mogahed, 2007:2,3).

Writing in *The Guardian*, Spencer (2009) is of the opinion that Darwin-scepticism may have an Islamic flavour. He refers to a British Council study conducted in early 2009 to mark the

bicentennial of Charles Darwin which found that Egypt, the only Muslim country in the study, had the largest numbers who believed that evolution and belief in God were incompatible. In the UK, a study conducted simultaneously by the think-tank, Theos, showed that 35% of Muslims adhered to a young-earth creationism paradigm compared to 17% for the rest of the population sampled.

Dawkins assigns blame for the proliferation of creationism to school teachers who are concerned with political correctness (Macrae, 2008). In addition, he implicates the influence of Muslim parents in this proliferation and calls for evolution to be taught from the age of eight to ameliorate what he perceives as indoctrination. In a further attack, he criticizes the government who, in his view, privilege multiculturalism at the expense of science. Not one to mince his words, Dawkins believes that many are silent for fear of being called racist or Islamophobic (Macrae, 2008). Dawkins' books have never been translated into Arabic and his works are heavily censored in Turkey (Henderson, 2009). The Islamic literalist tradition is the underlying reason for this implacable stance and acrimony, according to Dawkins. To his mind, the recent upsurge in hostility towards evolution in the UK is linked to the rise in Islamic influence gauged by the 30% of teenagers who subscribe to some form of Intelligent Design theory (discussed in chapter 3.3).

For some, Dawkins' tirade will be perceived as motivated by his dislike of all things religious. While there is a kernel of truth to this, a study of this kind, which addresses a twin-barrelled controversy – creation-evolution along with Islam – must nevertheless steer clear of the temptation to conform to dominant prescriptive templates palatable to postmodern sensibilities. Barnes (2007) for example, captures this dilemma:

The problem with too many representations of Islam in religious studies is that the political distinctiveness of faith is overlooked by the imposition of a liberal theological scheme of interpretation that privileges the spiritual and the transcendent dimension over the material aspects of religion. The religions are domesticated to fit a Western “secular” model of religion that regards it as irrelevant to political action and motivation (Barnes, 2007).

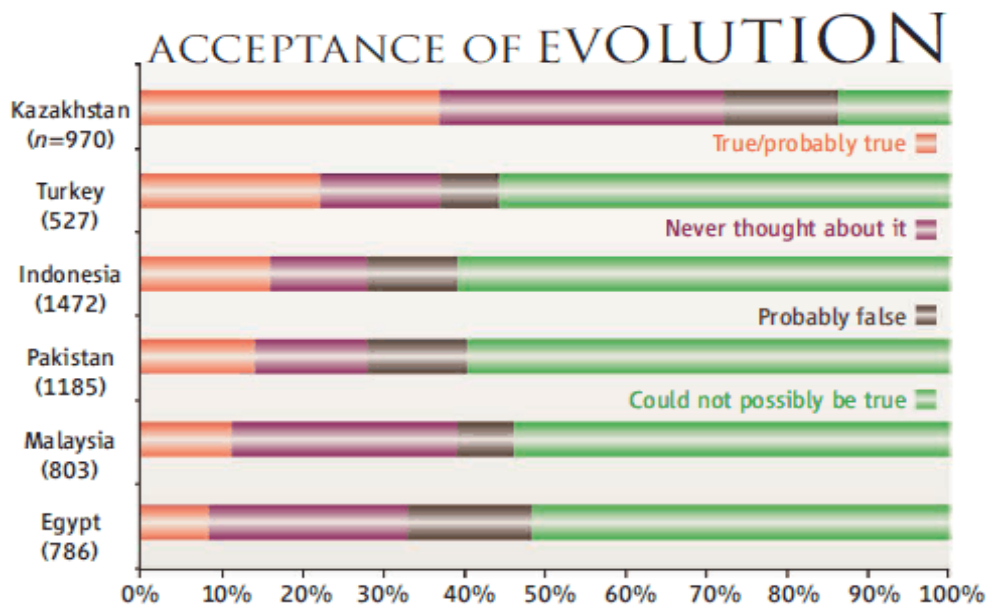
This study argues that an approximation of the creation-evolution debate from an Islamic perspective cannot be decoupled from the political and social aspects of Islam simply because the principle of *tawhid* (unity of God), considered a touchstone of Islamic ontology and epistemology, precludes such demarcations. It is for this reason that the trajectory of Islam and the West – particularly with reference to the onset of modernism – is central to this study. Participants studied in this project were of the view that Muslim academics (e.g. Edis, 2008; Guessom, 2008; Masood, 2007, 2009; Sardar, 2007 and Shanavas, 2005) who believe the theory of evolution is compatible with Islam are constrained by their prestigious positions in Western institutions and do not represent the view of the worldwide Islamic community (*umma*).

Furthermore, it is claimed that because many Muslims are convinced that Darwinian evolution is an atheist ideology masquerading as science, this prejudice obfuscates the nature of the debate. Lewis (2007:xiii) like Barnes (2007), was concerned about the left-leaning academic community which did not take religion seriously as a component of identity in the early 1990s. Now, ironically, he worries that Islam has been distorted to explain disparate phenomena, "...whether riots, disaffected inner-city youth, political radicalization or violent extremism". This demonstrates the difficulty of grappling with the at times conflicting interpretations which serve to enhance certain agendas. The aforementioned Dawkins makes no attempt to distinguish Islamic creationist beliefs from those of fundamentalist Christians in the USA, for example.

Hameed (2008) acknowledges that there is no "official" opinion on evolution in Islam. Indeed, Islam itself, with its internal diversity and local distinctiveness, evades any attempt at reification despite showing a large measure of conformity in certain areas. Though evincing some similarity, the two religious traditions (or their interpretations) diverge in many aspects. As chapter three (see 3.3.3) illustrates, many Muslims should feel no pressure to subscribe to a young-earth hypothesis as an old-earth paradigm fits comfortably with Muslim exegesis of the Qur'an. The biblical genealogies in Matthew 1 and Luke 3, for example, are not exhaustive accounts intended to function as precise chronologies or "time-clocks" to ascertain the age of the earth. Secondly, it would be rather odd to expect Muslims to embrace the subjective conclusion of Bishop Ussher (1581-1656) who is credited with arriving at the date October 4, 4004 B.C. for the creation of Adam (Lindberg and Numbers, 2003:114).

This present study seeks to understand not only such discrepancies, but explore the underlying ontological and epistemological trajectories of the two religions with reference to the creation-evolution debate. The figure below (Hameed, 2008:1637) illustrates the low level of support for evolution in six Muslim countries. Of significance is Kazakhstan (roughly 35%) and Turkey (20%) which, despite prolonged exposure to communism and secularism respectively, fare only slightly better than traditional Muslim countries.

**Fig.1. Acceptance of evolution in six Muslim countries**



**Acceptance of evolution in six Muslim countries.** The data were gathered from 1996 and 2003, as part of a study of religious patterns in Muslim countries (8). The number of participants for each country is given in parentheses.

As a holistic religious tradition, Islam is shaped, not only by a universalism which perceives the community as a transnational transcendental entity (*ummah*), but also a particularism where the local, ethnic, linguistic and other cultural features are valorised. Beliefs with reference to issues of the origin of life are often mediated in the confluence of both currents. 14 of the 25 participants in this study are British-Somalis settled chiefly in London. This will be addressed subsequently. In what follows, I will trace the contours of Islam in the UK and highlight events that have contributed to distilling a particular British Muslim identity. This framework, it is hoped, can usefully act as a filter to study the creation-evolution debate from an Islamic perspective.

## 1.2. Islam in Britain.

John L. Esposito underscores the growing importance of Islam in Europe borne out by the demographics when he states, “It is just as important to speak of Islam *in* the West as Islam *and* the West” (Baxter, 2006:164). Until recently, this parlance was non sequitur given the psychological and territorial distance between the West and Islam. The West has historically carved out an indigenous identity parasitic upon, among others, the alterity or “Otherness” of Islam. If, as some scholars of human psychology maintain, the need for self-esteem, recognition and approbation require the concept of an enemy in order to reinforce identity, then Islam fulfils such a role in the Western psyche.



Despite the roughly 700 Muslims present in Britain in 1881, vehement pronouncements were made against Islam. W.E. Gladstone was convinced that Europe would look in vain for peace as long as there were followers of “that accursed book” (i.e. Qur’an) (Ansari, 2004:80). The founder of the first Muslim congregation in Liverpool, William H. Quilliam (a convert), was quickly evicted from the premises when the landlord discovered that he was a Muslim. The then Prime Minister, David Lloyd George, (1916-22) verbally assaulted Islam and called the conquest of Palestine “the British Crusade” (Ansari, 2004:90). Social Darwinism and eugenicist theories held sway in the public consciousness in the early twentieth century. Muslim men, who had arrived as sailors, often married white women and settled in port cities like Cardiff and Liverpool. With calls for miscegenation to be banned, Richardson, in his report for the British Hygiene Council and the British Council for the Welfare of Mercantile Marine (1935), warned that “half-caste” children inherited the social flaws of their Arab and coloured fathers (Ansari, 2004:94).

Huntington (2004) acknowledges the ineluctable need for individuals and nations to go in search of an enemy. It seems, in a Machiavellian way, that war or the concept of an enemy who poses imminent danger bolsters national cohesion. He surveys American history and finds ample examples of designated foes: German “Kaisirism”, Japanese regimentation, Nazism and communism. The end of the Cold War deprived America of an enemy. However,

The cultural gap between Islam and America’s Christianity and Anglo-Protestantism reinforces Islam’s enemy qualifications. And on September 11, 2001, Osama bin Laden ended America’s search (Huntington, 2004:263).

The presence of over 15 million Muslim residents in Europe has exercised minds in reconfiguring this traditionally antagonistic picture. Britain registered 5, 000 Muslims in the 1951 census which has increased considerably to 1.6 million in 2001 (Baxter, 2006). About 70% are British born and over a third of the Muslim population resides in the London area (Coles, 2008:6). Identifying spaces of non-contact or belligerent contact as incubators for a subversive mythification of the other, many European countries have sought to upend this mythification through various policies and initiatives. Britain, after having unsuccessfully pursued assimilationist policies with regards to Muslims, promulgated the concept of multiculturalism and integration in the socio-political climate of the 1960s and 1970s. “As Anthony Giddens had earlier recognized, because of its social potential, Islam was unlikely to decline in the face of secularization” (Baxter, 2006:169). Rather than assimilate, Muslims were given space to be distinct within a paradigm of coexistence. According to Gilles Kepel, it was ironically multiculturalism which marginalized the value of religion as a significant factor in the daily life of British Muslims (Baxter, 2006:170). This *prima facie* tolerant gesture was to have significant repercussions.

Quite unexpectedly, multiculturalism became a force cementing religion as the lynchpin of identity for Britain's Muslims. The official policy of multiculturalism obscured the heterogeneity and multiplicity of voices in the Muslim community. Politicians and the media helped fortify the perception of multiculturalism as a dominant and tolerant Anglo-Saxon state condescending to a belligerent but small Muslim community. John Patten, the Conservative Home Affairs Minister, maintained that Muslims could not be British as long as they owed allegiance to Islam: "one cannot be British on one's exclusive terms or on a selective basis, nor is there room for dual loyalties where those loyalties openly contradict one another" (Ansari, 2004:11). For many Muslims, the refusal to grant their religion protection under the blasphemy laws underscored their fears of legal and socio-political disparity. It is perhaps a challenge for some in the West, accustomed to the relegation of religion to the private sphere, to adequately comprehend the salience of religion to Muslims.

While the role of religion as a unifying factor needs to be treated with caution, and as Humayun Ansari points out, religion "conceals a great deal of diversity and is interlocked with other, secular forms of identity", it can still be viewed as increasingly relevant to the communal identity and self-understanding of Muslims in Britain (Baxter, 2006:168, 169).

Two crucial events (prior to 9/11) were instrumental in fomenting a unique British Muslim identity: the Honeyford affair and the Rushdie affair. The Honeyford affair still casts a long shadow over Muslim relations with the educational sector. Muslim concerns over the permissive ethos pervading British society saw a flurry of activity aimed at influencing education since the 1960s. Lobbying successfully upon clauses in the 1944 Education Act, Muslim stakeholders won concessions sympathetic to Islamic practices and values. "This policy pivoted on two central components: concessions to the minority group which ensured children could not be asked to act in a way which was contrary to their religious beliefs and the treatment of all religions and cultures with equal respect" (Baxter, 2006:173,174).

Ray Honeyford, a secondary school headmaster in Bradford, began publishing letters in the local *Salisbury Review* warning of the disintegration of British norms and values in the school in 1984. He cited the abuse of the 1944 Education Conscience Act by Muslim parents who exploited the clause granting influence over the exposure to religious education. On an administrative level, Honeyford criticised the practice of keeping children away from school in countries of origin. He argued that the clause was extrapolated to prohibit the girls from participating in physical education and dance (Baxter, 2006:175). Significant pressure from Muslim stakeholders ultimately led to Honeyford taking an early retirement. Clearly this resounding socio-political victory did much to boost the confidence of Muslims in Britain.

What the cursory mention of the Honeyford affair above suggests is that a controversial debate, such as the creation-evolution one, seeking to interrogate dearly held Muslim religious beliefs cannot be approached as a stand-alone issue divested of the socio-political and cultural ramifications such a debate would generate. What must be taken cognizance of is the wider matrix-like network of the contextualized history of Islam in Britain and impulses from the wider *ummah* (community). The most iconic issue that perhaps captures this complexity is the Salman Rushdie affair in 1989. Rushdie, according to Bhiku Parekh, became “a potent symbol of the survival of the British way of life” (Baxter, 2006:178). Rushdie, a lapsed Muslim, embodied the successful, affluent and educated example of the prototype immigrant fêted by secular British society. For many Muslims, this very act of celebrating an apostate and, even worse, anti-Muslim figure, was sure-fire evidence of Western antipathy towards Islam. For other Muslims, the Rushdie affair was emblematic of the dangers inherent in the dilution of their Islamic identity. The dismissal of the Rushdie affair by the High Court in 1990, citing the inapplicability of the blasphemy laws to Islam, affirmed Muslim suspicions that, although granted citizenship rights, this did not extend to their religious concerns. This disparity further entrenched an “outsider” mentality among British Muslims. The Rushdie affair promulgated the inaccurate or poorly nuanced view that Muslims were a community “homogenous in its anti-modern values and dangerous in its passions” (Baxter, 2006:180).

These seminal cases exposed the fault lines between the underpinnings of Western secular society and Muslims who espouse a theocentric and holistic worldview (*tawhid*) that rejects a Cartesian rupture typical of modernity (see chapter 2.5 for further discussion). The frustration of some Muslims living in Britain is compounded by the fact that traditional Islamic jurisprudence (*fiqh*) did not envisage minority Muslim communities living in non-Muslim countries (Lewis, 2007:6). Except for the brief interlude of colonialism, Muslims generally were accustomed to power and domination. The perceived lack of respect for the faith of Muslims coupled with some suspicion of the proselytizing agenda of Christian faith schools, mobilized the Muslim community to lobby for Muslim schools funded by the school sector (Meer, 2009).

As the creation-evolution debate inevitably finds its way into the classroom, and the school’s ethos gives discursive shape to the terms of the debate, the next section looks at the rationale behind the calls for Muslim faith schools.

### 1.2.1 The rationale for Muslim schools.

In 1998, after sustained lobbying by Muslim coalitions, a watershed was achieved – a largely unsympathetic Conservative administration was succeeded by a New Labour government after 18 years which delivered on a promise to co-opt two Muslim schools: Islamia and Al-Furqan in London and Birmingham respectively into the state sector by awarding them voluntary aided status (Meer 2009). There are over 100 independent Muslim schools and 7 with state funding (Meer, 2009) in the UK. The UK think-tank, Civitas, puts the figure at 166 (Whitehead, 2009). This proliferation of faith schools has been extolled by some and maligned by others. Skinner (2002) opines that with the:

...existence of over 4700 state funded Church of England schools, over 2100 Catholic, 33 Jewish and 28 Methodist schools – Muslim campaigns for the faith schooling of Muslim children in the state sector, is indicative of “a modern society which is widely perceived as increasingly secular but is paradoxically increasingly multi-faith” (Skinner, 2002: 172).

Others like the Nobel laureate, Amartya Sen (2006:10), warn against a state policy like the UK’s which encourages and finances faith schools as promoting “a federation of religions” which can have adverse consequences for a multicultural society that should seek integration based on shared humanity. In addition to immediate contextual concerns (e.g. the Honeyford & Rushdie affairs), Muslims, most of whom hail from formerly colonized countries, have long harboured a sense of ambivalence with regards to Western education. For some, Western education was actually a Christian Trojan horse masquerading as education. Take Ghana, for instance, where Islam was well-established before the advent of Christianity. In Ghana, the now indigenised contemporary Church owes its power base to the legacy inherited from Western missionaries whose activities often piggybacked on colonial interests. “From the time the first Europeans touched the Ghanaian coast in 1471 and the foundation of Elmina castle in 1482, until the beginning of the 19<sup>th</sup> century, there had been attempts at the dissemination of the Gospel” (Nukunya, 2003:120).

One by one the various Missions began pouring into Ghana from the south: the Basel Mission (Presbyterian) was set up at the Danish castle Christiansborg in 1829; the Methodists arrived in 1835 at Cape Coast; the Bremen Mission (Evangelical Presbyterian) in 1847 and the Roman Catholics in 1880 at Cape Coast (Bartels, 1965). Although indigenized gradually, the Church’s paramount objective was to proselytize the country, and its most favoured and efficient mechanism was through the agency of schools. The Catholic Bishop Father Lejeune declared of Nigeria in 1905, “Education is our principal work and our hopes for the future are based on it”. Shanahan developed the “school approach” as early as 1905 in the conviction that “Those who hold the

schools hold its religion hold its future”. Clarke (1986:100) in tracing the history of Christianity in West Africa, writes that in the early 19<sup>th</sup> century, “The Church was the school and the school was the Church in these early days or, as one writer has expressed it, the school developed not as an institution but as a function of the Church” (Clarke, 1986:35).

Christianity was called the “The Great Object” (Clarke, 1986:43) and the church in Western Africa overcame the suspicion of the local chiefs by introducing new tools into agriculture, trade, furniture-making and other areas. These tangible benefits impacted the socio-cultural life positively and soon European languages and style of dress become more and more accepted. “For some local converts, Christianity became the symbol of higher social status” (Clarke 1986:43). No doubt all this was watched with horror by the Muslim community in Ghana. As a case in point, the largest church in Ghana today, the Catholic Church, grew exponentially capitalizing on the notion of schools as “the nursery of the Church” (Clarke, 1986).

During the period under review the development of the Catholic Church in Ghana was quite remarkable, rising from a few thousand members in 1906 to well over 50, 000 by 1924 and to over half a million by 1950. And after 1950 this kind of expansion continued, bringing the membership to over one million by 1970. The widespread use of catechists and the “school approach” to evangelisation provide an important part of the explanation for this rapid rise of Catholicism in Ghana (Clarke, 1986:99).

In addition to the suspicion grounded in the colonial legacy, Meer (2009, 386), in his study of the motivations for faith schools in the UK, gives prominence to the Islamic principle of *tawhid* that enmeshes faith with every dimension of existence. This vision of a holistic education “would presuppose faith rather than treat it as something extraneous to education” (Meer, 2009:389). This emphasis on the presupposition of faith punctuating every facet of education undoubtedly is incommensurate with the modern ethos of separation between state and church. With reference to this study, how, one may ask, can a teacher focus exclusively on the scientific theory of evolution alone (as many scientists stipulate) and avoid or deflect contending religious schemas within the holistic framework of Muslim faith schools? By definition such a framework, underpinned as it is by *tawhid*, would require a synthesis or the presentation of theistic alternatives in some form or the other. Faith schools, then, would oblige those who sloganeer behind the oft-repeated “teach the controversy” banner particularly in the USA (see for example Isaac, 2007; Scott and Branch, 2006).

Meer (2009) appraises arguments on both sides of the divide with reference to the autonomy enhancing or inhibiting effects of a faith school. Proponents argue that faith schools are pedagogically sound in providing religious scaffolding that takes the pupil from the familiar to the

unfamiliar. Furthermore, Muslim pressure groups, who initially welcomed subjects like religious education, later opposed what they saw as a relativistic and secular framework.

Inquiry, openness, sympathetic understanding of other faiths and respect for differences suggested that Islam was only one among many faiths, equal in status and open to questioning by rational principles. For some Muslims this approach challenged the absolute nature of their revelation and was therefore untenable to these sections of the Muslim population, for whom multicultural education sowed confusion and subverted their traditions (Ansari, 2004:314).

By way of response, opponents allege that faith schools constrict the critical faculties of young children inculcating their impressionable minds with religious dogmas hard to destabilize later on.

Robert Jackson (2004:52,53) outlines the most salient objections against faith-based schools:

- The aftermath of 9/11 has seen increased religious tension which necessitates more intercultural education and less separation of schools based on religious coloration.
- Such schools negate the personal autonomy of pupils to evaluate religious claims independently. They rather expect pupils to passively accept the teachings of adults.
- The widespread notion that religious bodies are representative of the schools or communities they represent is challenged. As Meer (2009) notes, 97% of Muslim pupils are still educated in the public sector. The first Muslim mayor of Bradford states that many Muslim parents do not want a separation but a focus on asserting their identity and gaining cultural concessions in the public schools.
- Should a democratic state fund mission and proselytizing?
- Selection procedures disadvantage other schools as they often build a reputation as morally sound schools with good discipline which is often capitalized upon to siphon off the cream of students.

This present study involves participants who have not been enrolled in Muslim private/independent schools. As such, it is of interest to gauge attitudes towards the theory of evolution as taught in secular state schools without the filter of an Islam ethos. One can, however, argue that since many Muslim pupils attend *madrassas* after school hours, the secular influence is mitigated or perhaps negated. Civitas puts the number of *madrassas* in the UK at 700 (Whitehead, 2009).

As mentioned earlier, 14 of the 25 interviewees hailed from British-Somali backgrounds. This study has not found anything in particular which indicates that British-Somalis responded differently from other British Muslims. Nevertheless, as 56% of the respondents hail from such a background, a brief discussion is in order. To better understand the worldview of British Muslims with a Somali ethnic background, the next segment looks at factors that impact upon a British-Somali identity construction.

### 1.2.2. Somali identity construction among the diaspora.

There is a paucity of research into the size of the Somali community in the UK. Hopkins (2010:520) estimates that about 60, 000 Somalis live in London. Other sources put the figure at 70, 000 for the estimated number living in London<sup>1</sup>. A report on Somalis dating to 2004 states: “There is no official estimate of the size of the Somali population in Britain. The closest monitoring category - Black African - is too broad to provide useful information. The Somali community itself estimates its size at about 95,000 people [nationally]...” (Khan and Jones, 2004). A large proportion of the Somali population in the UK arrived as asylum seekers/refugees in the aftermath of the collapse of former dictator Siad Barre’s dictatorship (1969-1991). Upheavals such as a civil war followed by a crippling famine saw waves of exodus to Western countries in the late 1980s all the way to the present. Despite this new influx, Somali merchants and seamen “were a common sight on the docks of Cardiff, Liverpool, Bristol and London” (Reddie, 2009:149) as early as the nineteenth century. In fact, Somalis were recruited to fight for king and country in the First and Second World Wars (Reddie, 2009:149). With regards to religious freedom, The US State Department’s *International Religious Freedom Report 2009* (USSD IRF report 2009), covering the period from 1 July 2008 to 30 June 2009, and published 26 October, 2009 noted:

Similarly, Somaliland and Puntland establish Islam as the official religion in their regions. Article 5 (1-2) of the Somaliland Constitution establishes Islam and prohibits the promotion of any other religion. Article 313 of the Somaliland criminal code outlines penalties for Muslims who change their religion. Articles 41 and 82 state that candidates for president, vice president, or the House of Representatives must be Muslim. Article 15 stipulates that Islamic education is compulsory at all levels and that the promotion of Qur’anic schools is the responsibility of the state. The Constitution further states that the laws of the nation shall derive from and not contradict Islam.<sup>2</sup>

Using surveys and focus groups to study the challenges Somalis face as an emerging community in the London borough of Camden, Khan and Jones (2004) highlighted the salience of the Islamic faith to which respondents tended to attach the highest importance. On a scale of 1 to 7, where 1 = very important and 7 = not at all important, the mean score rating was 1.29 indicating the high significance accorded the Islamic faith as an identity marker (base number 100). This extended to both genders where 9 out of 10 said that Islam was extremely important. The salience of religion for Somalis was uniform across the focus groups.

---

<sup>1</sup> Sources: UNHCR, 2001 census, BBC, Home Office.

<sup>2</sup> Country of Origin Information Report (2010, May 19). *Home Office UK Border Agency*. Available Online at: [http://search.homeoffice.gov.uk/search?q=somalia&entqr=0&output=xml\\_no\\_dtd&sort=date%3AD%3AL%3Ad1&clint=nt=default\\_frontend&ud=1&oe=UTF-8&ie=UTF-8&proxystylesheet=default\\_frontend&site=default\\_collection](http://search.homeoffice.gov.uk/search?q=somalia&entqr=0&output=xml_no_dtd&sort=date%3AD%3AL%3Ad1&clint=nt=default_frontend&ud=1&oe=UTF-8&ie=UTF-8&proxystylesheet=default_frontend&site=default_collection) . Accessed 11.10.2010.

“First of all we are Muslim, more than above anything” (Youth Focus group).  
“Can’t call ourselves British, but Somali Muslims” (Youth Focus group).  
“Teachers said because of health and safety reasons I couldn’t wear *Hijab* (headscarf), I couldn’t go to school for one year, it affected me because I was really behind other kids” (Education Focus group).  
“It’s not just the fact that we are black, but Muslim” (Education Focus group).  
“We are all Muslims...religion is very important” (Women’s Focus Group) (Khan and Jones, 2004).

Research from across the Atlantic reinforces this strong intermingling of religion and identity among Somalis. In his study of Somali secondary school pupils in Toronto, Canada, Collet (2007) writes:

Expanding on this close coupling of Somali identity and Islamic identity, interviewees also stated that it is quite difficult for Somalis not to be Muslims. When asked if it were possible for someone to be a Somali but not be a Muslim, several interviewees stated that this was absolutely not a possibility (Collet, 2007:140).

Hopkins (2010:525) in her research on Somali women and the factors that impact upon identity construction in resettlement in London and Toronto, highlights the role of the giving and receiving countries in forging an “enacted fantasy”. In other words, Somali refugee women, caught in the confluence of conformity pressures exerted from the local milieu in conjunction with the influence from the country of origin, feel pressured to adopt a posture that ostensibly valorises Somali identity often through explicit identity markers such as dress or religion. Hopkins (2010) argues that this is a dynamic process of reinterpretation and repositioning with new meanings emerging.

In light of the above, it can be argued that Somalis in the UK, negotiating a new Somali identity sanctioned by the local as well as the home environment, may feel the need to adopt a more parochial view in relation to religiously coloured issues such as the creation-evolution debate. Such parochialism may become an attractive option when seen through the lens of the alienating effects of diaspora experience and the hardening attitudes towards Islam in the West since 9/11. The astonishment in Britain at the revelation that the 7/7 bombers were “home-grown” terrorists with Yorkshire accents is a case in point of this newly configured radical identity as “enacted fantasy”, one in which the young men passionately proclaimed their empathy and allegiance to the Muslim *ummah* in distant Iraq and Afghanistan.

Scholars, on the flipside, caution against imposing a rigid homogeneity (Lewis, 1965; Lewis, 1994; Cassanelli, 1995; Besteman and Cassanelli, 2000; Griffiths, 2002). Given the heterogeneity prevalent among Somalis (e.g. clan system and north-south divide) it would be a misconception to assume a single, united and cohesive community. Neither should the above references be taken to imply that most British-Somalis will inexorably become more conservative in their religious



outlook let alone radical due to the push and pull factors in the diaspora. Somalis were conditioned in a pre-civil war context of socialism and secularism during the dictatorship of Siad Barre. Some would argue that clan allegiance has always weighed more heavily than even religion. Thus one ought to pay attention to the plethora of clans and their sub-divisions, the north-south divide in Somalia and other fragmented contexts which have informed the construction of a British-Somali identity. Nonetheless, religious identity is one category among Somalis that enjoys a strong consensus. In a minority situation, with all the negativity this entails, Islam becomes a vital common denominator in reconfiguring identity.

In conversations with a number of blacks, from diverse countries, I have often heard explicit denunciations of the theory of evolution as a pseudo-scientific contrivance to justify racism. The responses in chapter 8, among others, show this unfortunate linkage. This link is explored briefly in the next segment and revisited in other chapters.

### **1.2.3. The debate and constructions of “blackness”.**

Harun Yahya (1999:87,88) narrates the story of the pygmy, Ota Benga, who was captured by an evolutionary researcher in the Congo in 1904 and displayed to the public in the St. Louis World Fair. He was introduced as the closest transitional link between apes and humans. Benga was subjected to further humiliation when exhibited in the Bronx Zoo, New York, as an ancient ancestor of man locked in a cage along with a gorilla named Dinah and an orang-utan called Dohung. Finally, out of sheer desperation, Benga commits suicide. For Yahya (1999), this scandalous episode not only demonstrates the inherent racism built into the theory of evolution but, additionally, the unscrupulous character of evolutionists who do not hesitate to employ deceit in advancing their claims. In an internet article, an incensed Yahya (2009) accuses Darwin of fomenting racism against Turkey and inciting its extermination by superior Europeans. He cites a letter (3 July, 1881) Darwin wrote to the scientist, W.Graham, where, among others, the following appears:

The more civilised so-called Caucasian races have beaten the Turkish hollow in the struggle for existence. Looking to the world at no very distant date, what an endless number of the lower races will have been eliminated by the higher civilised races throughout the world.<sup>3</sup>

---

<sup>3</sup> Yahya (2009, February 1) Darwinism is the main source of racism.

<http://us1.harunyahya.com/Detail/T/EDCRFV/productId/12529> Accessed on: 20.10.2010. The whole letter can be read at <http://www.darwinproject.ac.uk/entry-13230> Accessed on 20.10.2010.

The eminent Muslim scholar, Maulana Abd al Haqq al Faruqi Thanvi (1863-1943), also decried what he perceived as the deprecation of human value at the core of evolutionary theory. “In our days certain insolent, unscrupulous, and indolent people have had the temerity to suggest that Adam is the name of the ape which first turned into man. May Allah protect us from such things!” (Lumbard 2004:109). To his mind, the evolutionary suggestion that a number of apes instantly evolved into a community of humans violates the integrity of the Qur’an which understands Adam to be a singular individual with no animal predecessors.

In his book, *Corrupted Science: Fraud, ideology and politics in science* (2007), John Grant cites a passage from Darwin’s *Descent of Man* (1871) where Darwin’s racially loaded and deterministic interpretation of the theory of evolution reveals him as a man of his time:

At some future period, not very distant as measured by centuries, the civilized races will almost certainly exterminate, and replace, the savage races throughout the world....The break between man and his nearest allies will then be wider, for it will intervene between man in a more civilized state, as we may hope, even than the Caucasian, and some ape as low as a baboon, instead of as now between the negro or Australian and the gorilla (Grant, 2007:193).

T.H. Huxley (1825-1895), dubbed “Darwin’s Bulldog” and the man who coined the phrase, “survival of the fittest”, stated, “No rational man, cognizant of the facts, believes that the average negro is the equal, still less, the superior, of the white man” (Grant, 2007:193). Huxley espoused the pseudo-scientific teaching of nineteenth century prognathism. Prognathism was based upon contrastive studies of the jaws of Africans and Caucasians. The not so subtle resemblance of the “Hottentots” protruding jaw to the lesser apes was “evidence” of their primitiveness compared to the smaller jaw of the Caucasian.

Regrettably, the likes of Yahya, who mine evolutionary literature for such statements while fully aware that they were not limited to evolution alone but abound in other disciplines of the time, have done much to obfuscate the debate. On the other hand, evolutionists have also levelled charges of racism against creationists. Isaak (2007:4) gives three such examples: George McCready Price, a prominent creationist, referred to “Negroes” and “Mongolians” as “degenerate”; the creationist-inclined apartheid regime of South Africa promoted a Christian National Education system which disallowed evolution and maintained the superiority of the white race and, finally, Henry Morris, the father of US creationism, is accused of reading racism into the Bible:

Possessed of a racial character concerned mainly with mundane matters, they (Hamites, especially Negroes) have eventually been displaced by the intellectual and philosophical acumen of the Japhethites and the religious zeal of the Semites (Isaak, 2007:4; Grant, 2007:185).

Clearly, even a perfunctory familiarity with the contentious creation-evolution debate reveals that allegations of racism proliferate. It is not within the scope of this study to assess the legitimacy of these claims. Of significance, however, is the psychological impact the story of Ota Benga, for example, can have on the black psyche when filtered through the fiery rhetoric of a Yahya (1999) or Louis Farrakhan of the Nation of Islam. For many African-Americans, smarting from the effects of Jim Crow laws in the South, one of the main attractions in converting to Islam lay in its claim to racial equality. The high-profile conversions of Muhammad Ali and Malcolm X in the heyday of the Civil Rights movement illustrate the latter point. Richard S. Reddie, in his study of why increasing numbers of Black Britons are converting to Islam, suggests that traditional Black churches are perceived as too conservative and domesticated in a society where being Black, young and voiceless fuel institutional racism (Reddie, 2009:231). The 2001 census showed that around 9% of Black Britons described themselves as Muslim. Reddie (2009:149) states, "In London where around 50 per cent of the Black population lives, it is estimated that 13 per cent of Muslims are Black". It is beyond the scope and competence of this study to explore the psychological links, if any, between the rejection of evolution and any perceived racism. However, as the findings show, interviewees did allude to racism now and then.

Islam, like Christianity, has seen centuries of critical debate with regards to the historicity of traditional orthodoxy with the objective of elucidating ways of negotiating new challenges. One such challenge is the theory of evolution. Whether legitimate or exaggerated, the scientific discoveries of Newton and Darwin, among others, disseminated the view that science and religion were locked in opposition. The next section looks at the challenge that evolution posed to Islam.

### **1.3. Islam, science and evolution.**

Generally dismissive of the claims of evolution, many Muslims in the East were content to perceive the controversy as another blasphemous error in a long list of errors emanating from the West. As long as the Western colonial powers in Muslim countries did not proselytize Darwinian evolution, the debate was considered non-sequitur. The physical displacement of sizeable Muslims to the West in the last few decades has served to firmly place them in the cross-fire of the controversy as evidenced by, among others, the verbal attacks of Richard Dawkins. In some respects, the counter arguments of Muslims appear to cohere with that of Christian creationists in the USA. In the *Telegraph.co.uk* (2009), Guessom explains that many Muslims reject what is presented as a "binary choice" between Darwinism and creationism. Implicit in this refutation is the

call for equal time and status for both views in education. The numbers were not very encouraging for the UK either. An Ipsos MORI poll on behalf of the British Council showed that:

54 per cent of respondents wanted Christian-backed explanations of the origins of life to have space on the curriculum alongside Charles Darwin's theory of evolution. Less than a quarter (21 per cent) believed that schools should teach only evolution – a lower proportion than in India and Roman Catholic countries such as Spain (Telegraph.co.uk, 2009).

The above poll does not ascertain the percentage of Muslim responses, but the results are nevertheless telling. This study focuses on the impact of the Muslim worldview upon the scientific theory of evolution. For instance, as the discussion in chapter 2 demonstrates, the Islamic concept of *tawhid* resists any attempt to atomize or compartmentalize the natural realm from the spiritual which is the unchallenged *modus operandi* in the West, especially in the natural sciences. For Muslims, “binary choices” would throw up a schematic ultimatum dissonant with a holistic *tawhid*-inspired religious ontology and epistemology.

Islamic history demonstrates periods where scholars like Averroes (Ibn Rushd), Ar-Razi and al-Farabi, to name a few, felt no qualms in marginalizing - even compartmentalizing – their Islamic heritage in their quest for new knowledge. There appears to be a historical precedence for a separation between the realms of religion and state in the Muslim world long before the Enlightenment in Europe. A small number of Muslim academics in Western institutions have been quite outspoken in their support for evolution. One such protagonist is the aforementioned Nidhal Guessoum, Professor of Physics and Astronomy at the American University of Sharjah in the United Arab Emirates. The *Telegraph.co.uk* (2009) reports:

Dr Guessoum, a Sunni Muslim, said that contrary to some beliefs, evolution does not contradict Islam, unless the texts were read too literally. Many Muslim scholars, from the golden age of Islam to today, adopted an evolutionary world view.

Clearly, the “Golden Age” of Islam (ca. 750-1100 CE) was predicated upon a more elastic paradigm of hermeneutics or *ijtihad* (sustained reasoning). It will be argued later that there has been a constriction in *ijtihad* in the Islamic world which in large measure is responsible for the overwhelming rejection of the theory of evolution as evidenced in the responses (chapters 5-8). The question of which interpretive paradigm dominates the intellectual horizon will undoubtedly impact on the creation-evolution debate in Islam in the coming decades. The spirit of *ijtihad* will be rigorously tested in the confrontation with the theory of evolution as science and Islam converge ever more closely.

### 1.3.1. The constriction of *ijtihad*.

Ziauddin Sardar (2007:132) postulates that the classic Islamic conceptualization of knowledge (*ilm*) was perceived as an inclusive or holistic arena where dialogue was engaged in by scientists, theologians, philosophers and artists, among others. Colonialism, Sardar (2007) contends, supplanted and ostracized this Islamic intellectual milieu through the imposition of modern societal structures and institutions with the aim of perpetuating Western hegemony. This constriction of intellectual space precipitated a climate where Muslims revisited the question of knowledge and its legitimate parameters. The ensuing humiliation and subservience spawned a defensive “enclave mentality” in which knowledge (*ilm*) was narrowed down to religious knowledge alone. Islam historically encompassed the notion of consensus (*ijma*) through dialogic processes. However, a new and truncated reading of community (*ummah*), privileged only religious scholars thus reducing the consensually produced pool of knowledge from various disciplines of learning. In this new reductionist environment, the cross-pollination of knowledge gradually sputtered to a halt (Tibi, 2009). Perhaps, these propositions usefully explain why a majority of Muslims today eschew the notion of teaching evolution in schools. This is seen, as some argue, as the outcome of a hegemonic religious discourse promulgated at the expense of the earlier democratic tradition which was eventually gagged by the ascendant *fiqh* (school of legal jurisprudence) orthodoxy (Tibi, 2009; Küng, 2007). Sardar (2007:133) forwards an interesting contention: contrary to Muslim assumptions, the holistic tradition of *tawhid* has actually been truncated since colonialism. Colonialism with its inherent modernism carved up spheres of knowledge and interaction in the Muslim world. This resulted in dependence, compliance and subservience to the colonial powers. Reduced to adjudicating on matters of faith and interpretation of religious texts, the earlier Averroist spirit stagnated. Islam now lacked the earlier status it enjoyed as a viable source of knowledge. Modernism and colonialism in this manner had the regretful effect of further cementing the view that Islam was an atavistic anachronism dabbled in by a small group of indigenous religious scholars. The *ulama* thus strengthened their hold on religion.

As explored in chapter 2, the concept of “Islamic science” has many controversial shades of meaning attached to it. Sardar (2007:133) envisions it as “an objective and systematic endeavour within the framework of Islam, motivated by Islamic injunctions on the virtues of reason and the pursuit of knowledge”. This definition, Sardar (2007) notes, is not the model pursued by many Muslims. Two distorted views have proliferated: The first is an “Islamic science” emanating from a fundamentalist perspective determined to align all scientific discoveries with the Qur’an in a post-hoc manner. For example, the theory of relativity, quantum mechanics, Big Bang, embryology and much of modern geology, it is claimed, has already been foretold in the Qur’an. This strategy employs a defective research design alien to science. For example, experiments to “harness” the energy of “jinns” (good or

evil spirits) quite popular in Pakistan in the 1990s are a case in point (Sardar, 2007). The Muslims interviewed in this study often attributed supernatural scientific knowledge to the Qur'an: where science agreed with the Qur'an, science was considered a useful ally, but an enemy where it contradicted their understanding of the Qur'an. Sardar (2007) subsumes creationism and Intelligent Design in this reductive fundamentalism. The second strand of pseudo-science promoted as "Islamic science" is one where mystics study the universe within the framework of higher levels of existence and consciousness. The occult, alchemy and astrology are rehabilitated as respectable components. Masood (2007:22,25) laments the impoverishment of science in Muslim states citing the negligible indices of research expenditure, patents and publications. The 2003 Arab Human Development Report on Building a knowledge Society goes even further:

The report blames authoritarian thought, lack of autonomy in universities, the sorry state of libraries and laboratories, and under-funding in the Arab world. Moreover, the report recognizes the conceptual challenges, calling, in particular, for "reviving *ijtihad*" as the driving force for change. Indeed, it is now widely argued that science can play an important part not just in re-establishing *ijtihad* but in making Islam whole again, reuniting reason with revelation (Sardar, 2007:133).

Masood (2007:25) refers to *ijtihad* (sustained reasoning) as "Islam's forgotten pillar". Although Masood is pessimistic with reference to the health and future prospects for science in the Arab/Muslim world, Sardar strikes a more positive note. For instance, Al-Azhar University of Cairo, which had jettisoned all secular subjects to concentrate on theology alone during colonialism, has now rebalanced its curricula with the reinstatement of science and other subjects. Similar trends are underway in Indonesia and Turkey.

The question one may legitimately ask is: can one usefully perceive current Muslim attempts to promote an "Islamic science", a cause championed by some of the interviewees, as a resistance strategy calculated to thwart the secularizing effects of modern science (e.g. evolution's disenchantment of the world) towards one where science is recruited in the task of re-enchanting the world? If true, then this could go some way in explaining the altercation between Islam and evolution among the grassroots and cast a long shadow over the debate in time to come. Parallel with the above mentioned constriction of knowledge in the Arab/Muslim world, the West experienced powerful movements (e.g. Renaissance, Enlightenment etc) which had an opposite effect: secularization shook off the monopoly of the Church in the domain of knowledge, especially in the natural sciences. These trajectories must be factored in to the current creation-evolution debate in Islam.

### 1.3.2. The clash of trajectories.

This study argues that a consideration of the creation-evolution debate among contemporary Muslims will necessitate a consideration of the diverging historical trajectories of Islam and Christianity. After all, the current debate in the UK is the denouement of views distilled through centuries of historical development which are now confronting each other in the West. For Kipling, there is “...neither East nor West, Border, nor Breed, nor Birth, When two strong men stand face to face, though they come from the ends of the earth!” Though East and West have met in the UK, the question is whether they can indeed see eye to eye on the issue of origins. Ward (2008) contends that the theory of evolution sprang out from a Christian-based intellectual revisionism. Perhaps the greatest philosopher and theologian of the scholastic period, Thomas Aquinas, summed up the prevailing worldview of his time when he declared, “Any perfection found in an effect must be found also in the cause...Effects obviously pre-exist potentially in their causes” (*Summa Theologiae* (ia, question 4, article 2). Ward (2008:60) illustrates the disjuncture that characterized the ancient and medieval world on the one hand contra the modern evolutionary world on the other. For Aquinas, it is “obvious” and manifest that reality is predicated upon a perfect and infinite cause. This flies in the face of evolutionary thesis which postulates a simple and less organized beginning which cumulatively produces more enduring entities. This is captured in the famous last sentence of Darwin’s *The Origin of the Species*.

There is grandeur in this view of life, with its several powers, having been originally breathed into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being, evolved (Darwin, 1998:369).

Until the eighteenth century, the Western psyche was conditioned by the notion of sin most associated with the theology of Augustine of Hippo. (354-430 AD). Developing his theology in reaction, among others, to the contemporary British monk, Pelagius, Augustine’s teachings on the themes of sin and grace transmogrified into what MacCulloch (2009:250) refers to as a “savage pessimism”. Augustine’s views on arbitrary salvation and predestination (and the later debates on the nature of lapsarianism (from Latin *lapsus* or the Fall) painted a picture of reality in negative terms with an accompanying stasis of agency. The temporal and the finite realm were associated with a fall from perfection. Scriptures which emphasize this disintegration and decay gained prominence:

For the creation was subjected to frustration, not by its own choice, but by the will of the one who subjected it, in hope that the creation itself will be liberated from its bondage to decay and brought into the glorious freedom of the children of God.

We know that the whole creation has been groaning as in the pains of childbirth right up to the present time. (Romans 8:20-22, New International Version).

The eighteenth century witnessed a new zeitgeist in which Christians reformulated their faith to align with the progressive spirit of the Enlightenment. God's self-expression was embedded in the ebb and flow of time and history which were now imbued with positive attributes in contrast to the earlier pessimism. Some invoked Christ's glorious incarnation to confer value upon the corporeal and temporal process of this world. Kant, Herder, Schelling and Hegel were grounded in the Protestant tradition which had discarded the authoritarian dictates of the Church. Autonomous inquiry and scientific investigation of nature were believed to be commensurate with this new buoyant Christian framework. In the words of the German philosopher and Christian pastor, Johann Gottfried Herder (1744-1803), "a progressive disclosing revelation of the Absolute" (Ward, 2008:61). In light of the above trajectory in Western theological/philosophical thought, Ward's (2008) assertion that evolution owed its development to religion is *prima facie* odd, but thought-provoking:

So, evolutionary thought, the thought of change and progress in history and in the development of life on earth itself, developed as a religiously imbued intellectual movement in eighteenth-century Germany. Of course, belief in evolution and in creation are compatible since evolutionism originated in the context of a revised view of creation as progressive self-revelation of God, of Absolute Spirit, in the genesis and development of intelligent life forms (Ward, 2008:62).

This study suggests that Islam's general censure of Darwinian evolution can be usefully analyzed within the framework of a historical trajectory that accepted the empirical aspects of modernisation but loathed the conceptual implications of a Western modernist agenda. In other words, whereas the technology and industrialisation accompanying Western colonial expansion was admired and coveted in Muslim lands, the conceptual/ideological elements secreted into modernisation were held in contempt. It must be kept in mind that modernisation is not about technological prowess alone but has an ideological component – humanism. Although the trajectory of Islam has been anything but uneventful, Islam experienced no intellectual movement akin to the Renaissance, Reformation, Enlightenment or the French Revolution. It was these movements, building on the Greek concept of humanism, which fleshed out and refined a whole intellectual/ideological regime of doctrines: human rights, the cult of reason, an anti-supernaturalistic metaphysic and democracy to name a few (Gyekye, 1997).



As Ward (2008) maintained, evolution was the brainchild of a Protestant world which had adopted a revised hermeneutic with regards to the biblical story of creation. If a wider acceptance of evolutionary theory is to be anticipated in the Muslim world, it can be argued that a revision will need to be undertaken beginning with the religious scholars. As Sardar (2007), Masood (2006) and a number of other scholars argue, the history of Islam has gradually seen a contraction rather than an expansion of intellectual space. Muslim countries have not been immune to the modernisation effects of globalisation. However, modernisation is not identical with Westernisation as modern Japan and China demonstrate. Though industrially advanced, these nations have tenaciously retained aspects of their old traditions with China openly hostile to Western notions of individual rights. The uneasy relationship between Western modernity and Islam is epitomized in the life of Hasan al-Banna (1906-1949), considered to be the founder of the Muslim Brotherhood in 1928. In his zeal to Islamize Egypt, al-Banna sought to eradicate every vestige of Western influence. He called for schools to be subsumed under the administration of Mosques and agitated for political parties and democracy to be expunged. Paradoxically, he recruited modern institutions such as businesses, clinics and schools to achieve these goals. He pours vitriol on Western powers for seducing Muslim leaders with their political acumen, military muscle and generous financial loans. However, it is not the empirical aspects of Western modernisation which roused his ire but the perceived decadence accompanying modernism's ideological apparatus.

They imported their half-naked women into these regions, together with their liquors, their theatres, their dance halls, their amusements, their stories, their newspapers, their novels, their whims, their silly games, and their vices...This being insufficient for them, they founded schools, and scientific and cultural institutes in the very heart of the Islamic domain, which cast doubt and heresy into the very souls of its sons and taught them to demean themselves, disparage their religion and their fatherland, divest themselves of their tradition and their beliefs, and to regard as sacred anything Western in the belief that only that which had a European source could serve as a model to be emulated in this life (Al-Banna, 1979:27,28).

Al-Banna is not alone in levelling Machiavellian charges against Western schools and scientific institutions which he claims deliberately plotted to undercut the integrity of Islam. As discussed in chapter 3, the Muslim world's primary conflict with the theory of evolution is that it is the brainchild of a morally decadent modernist project intent on destroying the Muslim faith and identity. In the aftermath of the Iranian Islamic Revolution (1979), many Muslim countries like Libya, Sudan, Pakistan, Malaysia and Indonesia condemned the perceived "Westoxification" of their Islamic identity and called for a return to the "straight path of Islam" (Esposito and Mogahed, 2007:42). As such, the creation-evolution debate in Islam cannot be studied in isolation but as a response to Western modernism in the eighteenth and nineteenth centuries which briefly follows.

#### 1.4. Islam and modernisation.

Muslim scholars like Fuad S.Naeem decry the binary mindset in the West which divides Muslims into two categories: fundamentalist puritans and progressive moderates. Naeem (Lumbard, 2004) contends that genuine civilisational dialogue is contingent upon recognition of the fourteen hundred years of the corpus of Islamic tradition that preceded modernism – essentially a movement which fundamentalism reacts to. Naeem (Lumard, 2004) claims to represent the majority of opinion in the Muslim world which negates the underpinnings of modernism understood as a movement opposed to traditional Islamic values and mores. The reaction to modernism in the Muslim world is perhaps best captured in the responses of two prominent figures in India: Maulana Ashraf Ali Thanvi (1863-1943) and Sayyid Ahmad Khan (1817-1898).

Paradoxically, the waning influence of Muslim Mughal India, encountered the first Europeans with the help of Muslim navigators aboard Vasco da Gama's ship. The British East India Company quickly consolidated each vital victory and by 1790, with Governor Cornwallis at its head, abolished Islamic law in India. Modernist Muslims, countenancing the superior British military prowess, capitulated spiritually and intellectually (Naeem in Lumbard 2004:85). With Sayyid Ahmad Khan as their foremost proponent, they decided to adopt the modernist agenda of the colonizers at the expense of traditional Islam. Sir Sayyid, who was fêted in the West, equated British thoughts of naturalism, rationalism, scientism and empiricism with Islam. Khan lionized the role of reason as the sole arbiter of truth and embarked on a wholesale reinterpretation of Islam. He was not alone in this infatuation with all things Western. Before the 1979 Iranian Islamic Revolution, Iran, under the Shah, faced similar pressures:

To be modern was not simply a matter of technological transfer. It was to be *Westernized* – wear modern (that is, Western) dress; speak a modern (Western) language; go to a secular school or university with a modern (Western-based) curriculum; and build modern cities and neighbourhoods, often designed by Western architects...Many believed that Muslims had to choose “Mecca or mechanization” (Esposito and Mogahed, 2007:41).

Khan founded the school of Aligarh in 1874 dedicated to streamlining Islam with the prevalent Victorian views of naturalism. All references to miracles and the supernatural were given new rationalistic meanings. For example, *wahy* or prophetic revelation became reason or natural law. The angel Gabriel is a metaphor for reason, Khan asserted. Revelation, in his view, is a natural faculty akin to intuition (Naeem in Lumbard, 2004). Khan recognized the incongruence of overlaying a theistic and teleological worldview upon a secular and mechanistic one. This, Naeem

(2004) opines, is the reason Khan attempts to disenchant Islam sanitizing it of supernatural elements.

Obviously, Khan invited the condemnation of the religious scholars (*ulama*) and many *fatwas* (religious ruling) were issued pronouncing him a *kaffir* (infidel). It was the arrogation to himself, a layman, the right to engage in difficult theological and judicial matters which incensed the *ulama*. Khan went so far as to suggest that Qur'anic eschatology (study of the last things or consummation), angelology, demonology and cosmology must be commensurate with sound scientific principles. Satan, according to him, is not a physical entity but a metaphor for the dark passions residing in man.

Sayyid Ahmad Khan viewed God only through *tanzih* (transcendence or remoteness), and turned him into a mere *Prima Causa*. This, in turn, resulted in opinions on his part that are astonishing to any traditional Muslim, like the notion that prayer cannot be heard (Naeem in Lumbard, 2004:88).

Pertinent to this study is Khan's acceptance of Darwinian evolution. "He interpreted the Qur'anic statement that 'semen' or 'seed' is the nucleus of life as a metaphorical illustration of the primeval movement of life emerging from inert matter" (Naeem in Lumard, 2004:88). The Fall of Adam was interpreted metaphorically too. Khan influenced Chiragh Ali, a radical proponent of modernism who declared that Muhammad never advocated the oneness of church and state which reveals his admiration for the ideals of the Enlightenment. Islamic laws of polygamy, divorce and Jihad ought to conform to Western standards, argued Chiragh Ali. Other modernists like Mir Aulad Ali (d.1898), professor at Trinity College, Dublin, employed rationalist language to deny charges that polygamy and slavery are core practices in Islam (Ansari, 2004:73).

Clearly, the contours of liberal Muslim theology sketched above, immersed in Western modernist discourse, was perceived as an offensive against Islam itself. In the eyes of the *ulama*, as reiterated earlier, these ideas were conflated with the West. Eternal truths were readily sacrificed for the ideological fashions of the day. It can be argued that the contemporary Muslim aversion to evolution emerged in the interstices of debates between Anglophile (and Francophile) liberals and the traditional religious authorities. For many Muslims, the iconoclasm of Sayyid Ahmad Khan and other anglophiles was emblematic of the whole project of modernism which led to a gradual retreat into an impervious shell. Any talk of open debate with regards to Muslims and the theory of evolution will need to address this resolute scepticism which is an offshoot of the encounter between modernism and Islam.

Naeem (2004) is critical of Western scholars, including Western-based Muslims, who exaggerate the salience of Sayyid Ahmad Khan and Muhammad Iqbal whom he protests were anomalies in their milieu. Rather, they ought to emphasize the likes of Maulana Thanvi who represents the large majority of Muslim orthodoxy. Thanvi rebuts detractors like Khan for making miracles look like habits of nature. He protested that liberals turn to outrageous speculations when they fail to undermine supernatural causation. For example, Thanvi contends, the modernist claim that Moses employed hypnotism and mesmerism to convince his audience that his staff had turned into a snake exposes the anti-supernatural prejudice driving the modernists (Lumbard 2004:104). Countering this hypothesis, Thanvi argues that hypnotism can easily be exposed for the fraud it is so Moses would not have attempted to engage in deception. In Thanvi's eyes, the profuse endeavour to conform the Qur'an to scientific discoveries is fraught with dangers. This is because (1) The Qur'an preoccupies itself with issues of the soul and not physical science or history and (2) If science discovers truths in the Qur'an then the West will expect Muslims to be grateful to Western ingenuity for uncovering truths no Muslim ever understood in their own holy book.

Thanvi pronounces Darwin a materialist and unbeliever who, due to his atheism, felt the need to invent the cult of evolution. To his mind, the fawning modernists, eager to please the West, felt no scruples in inflicting damage on Islam. Naeem (Lumbard, 2004) believes Islam has no need to be reformed. "The modernists mistake the power of the modern West with the truth of its ideas and thereby seek to modernize Islam in order to make it more powerful" (Lumbard, 2004:111).

#### **1.4.1. The rise of modernism and the demise of religion.**

For some Muslim scholars, the threat posed by Western modernism is so grave that this topic has been the subject of entire books. The prominent Islamic philosopher, Seyyed Hosein Nasr, of George Washington University, for example, wrote a book with the title *A Young Muslim's Guide to the Modern World* (1999) where he "educates" young Muslims in the West about the pitfalls of uncritically engaging with Western science and technology, in particular. For Nasr (1999), Western science and technology might appear ideologically neutral and areligious but the more Muslims embrace it, the more the cultural patrimony of Western values rubs off onto their psyche. The underpinning of Western science is a materialistic epistemology which, if adopted in some Muslim countries, will result in the emergence of a major hiatus and cleavage within the Islamic world (Nasr, 1999:129). For this reason, Nasr calls for an "Islamic science" predicated on an Islamic epistemology and ontology distinct from "Western science".

During the height of the Danish cartoon controversy (2005), the Imam, Abu Laban, who publicized the cartoons on a tour to the Middle East, was interviewed by the German journalist, Jörg Lau (2006, February 1).

In the interview... with *Die Zeit*, Abu Laban says that a Muslim could never be a normal citizen of a Western state. He makes a “security contract” with the secular state, but as a true believer he can never accept secularism – the separation of religion and state. He must always remain loyal to the highest religious law, the Sharia. “We Muslims must use freedom of speech,” says the imam, “to the extent that it serves the goals of Islam” (Eriksen, 2007)..

The view expressed, some might argue, is not representative of all Muslims. It is conceded that Abu Laban was more on the extremist end of Islam. Nevertheless, he lived for ca. 33 years in Denmark and was a prominent leader of the Muslim community there until his death in 2007. It appears that, rather than soften his position towards secularism, he denounces it. His belief that Islam and secularism are irreconcilable is significant.

Nasr (1999) cautions Muslims on the dangers of courting Western secularism. He shows how the forces of Christianity were relegated to the margins of society or diluted by liberal theology. “During the last few decades, there have been movements as ‘the death of God’ Teilhardism, liberation theology and the like which have introduced various forms of secularism including the theory of evolution and Marxism into the very body of Christian theology” (Nasr, 1999:148). It is this secular ambience, coupled with similar anti-theistic matrices, which destabilized Christianity in the West, according to him. Nasr appears to perceive Christianity in terms of a fallen comrade overpowered by the relentless onslaught of the juggernaut of modernism. Islam, he contends, must acquaint itself with and draw lessons from the fall of Christianity in whose bosom modernism first emerged only to rebel subsequently. Islam must now lock horns with secularism and avoid going the way of Christianity.

Such views from prominent Muslim exegetes reinforce the argument that the locus of tension with regards to the creation-evolution debate is perhaps better explored through the lens of modernism. Nasr (1999) is at pains to help fellow-Muslims familiarize themselves with the subversive impact of modernism upon Islam. Sigmund Freud is particularly singled out as the originator of “a view of human nature which is among the most anti-religious known in the modern world and began the practice of psychoanalysis which has come to replace religion in the lives of many people” (Nasr, 1999:174). Carl Jung fares no better in Nasr’s estimation for failing to distinguish between the Spirit and Psyche. Such scientists and psychoanalysts have, in his view, reduced the grandeur of the human soul to sexual complexes without recourse to God. For Nasr, Muslims who see a nexus or continuity between the Arab/Muslim science of the “Golden Age” and modern Western science are

misguided. Whereas Islamic science assumes the subjection of the physical realm to the higher spiritual one, Western science makes no such accommodation. Again, within the latter framework, reality is atomized following in the tradition of Descartes. In stark contrast, the Islamic worldview posits God as the supreme arbiter immanent in a cosmos with a descending hierarchy existing in an unbroken unity of porous nature.

Thus, for Nasr, modernism's absolute mathematisation of nature with the concomitant deprecation of non-quantifiable aspects of the physical is antithetical to Islam. Nasr (1999) is baffled as to the tenacity of the Darwinian theory of evolution. He is convinced that the "Anglo-Saxon" establishment refuses to countenance any contradictory evidence (which he believes exists in abundance) because "if evolution were to be rejected, the whole structure upon which the modern world is based would collapse" (Nasr, 1999:186). Ali Ünal (2006) believes, like Nasr, that evolutionary theory has a political and racial agenda at its core.

Before labelling me "unscientific" or "sceptic", remember that those people who have made gigantic advances in science and technology also posited such theories as biological evolution, the (white) European male's brain composition as biologically suitable for science, the Eastern (Muslim) brain for romanticism, and the (black) African brain for jazz and athleticism (Ünal, 2006:159).

Taken seriously, Nasr and Ünal's opinions can only lead to more scepticism and a further hardening of attitudes towards Western modernism and, by extension, the creation-evolution debate, especially as globalization gains greater momentum. In fact, one could speculate, given such views, that the creation-evolution debate could be the "ground zero" of the ideological battle. Intriguingly, it is Islam's apparent resilience against the corrosive force of modernism which attracts converts among white native Britons disillusioned with an ever-compromising diluted Christianity (Köse, 1999). Perhaps, if such a trend gains momentum, the anti-evolutionary stance among Muslims would further harden.

Islam's intransigent determination to conspicuously fly the banner of religion in a secularized Europe/Britain has paradoxically attracted some Britons disheartened with contemporary Christianity. Ali Köse's (1999) study of British converts to Islam revealed that a rejection of a watered-down Christianity in conjunction with a soulless modernity were factors instrumental in their conversion. Barnes' (2007) contention that Islam ought to be perceived as a political ideology along with its religious heritage is germane to the task of understanding Islam's resistance to the hegemonic forces of modernism. Carl Jung once wrote, "Among all my patients in the second half of life, that is to say, over thirty-five there has not been one whose problem in the last resort was not that of finding a religious outlook on life" (Köse, 1999). Jung's insight along with the growing

number of “victims of secularization” might go some way in explaining the attraction of Islam to some native Britons. Assuming that some Muslims are conscious of the advantages of such an “anti-modern” stance (understood in the sense of rejecting a soulless humanism and its corollaries), it would be tempting to conclude that the success in attracting converts fuels the current parochialism among some Muslims in the West.

In grappling with Islamic creationism, Western scholars will inevitably lock horns with the Muslim transnational and phantasmagoric *ummah* (community) itself which transcends the local parochialism of time and space associated with pre-modernism. It was for this reason that the Norwegian Foreign Minister, Jonas Gahr Støre, made a public apology to Muslims while travelling in the Middle East during the height of the cartoon controversy (2005). Eriksen (2007) captures the interlocking and transnational nature of the *ummah* which rioted over the Danish paper, *Jyllands-Posten*’s, cartoons:

As things got out of hand, even Jyllands-Posten apologised “for having offended many Muslims”, the Danish Prime Minister mumbled his apologies as he realised that Muslim countries were boycotting Lego, Bang & Olufsen and Danish butter; and even the conservative Protestant who edited the Norwegian fundamentalist magazine got his ten minutes of fame had a reconciliation meeting with leaders of the Norwegian Islamic Council (Eriksen, 2007:6).

Thus the *ummah* can be perceived as a disembodied Muslim body of opinion which, for better or worse, complexifies local Muslim relations with regards to the dominant majority in any country. Thus, for example, the creation-evolution debate among British Muslims would automatically draw in the voices of interlocutors in far away Muslim lands not unlike the Rushdie affair and the cartoon controversy.

The next segment puts the spotlight on the perceived atheism and moral ambivalence inherent in the theory of evolution as another crucial component exacerbating the controversy.

#### **1.4.2. Evolution, atheism and moral ambivalence.**

In his book review of Michael Ruse’s *Can a Darwinian be a Christian? The Relationship between Science and Religion* (2001), Charles L. Harper of the Templeton Foundation concurs with Ruse that evolution does not inevitably lead to atheism. Ruse states, “No sound argument has been mounted showing that Darwinism implies atheism. The atheism is being smuggled in and then given an evolutionary gloss” (Harper, 2001: 239,240). Despite this oft-repeated mantra, clearly intended to assuage the fears of theists, many Muslims seem unwilling to countenance the

arguments of scholars like Michael Ruse. This is because while evolution does not imply atheism, *neither does it imply theism*. For a devout Muslim, the proposition that life began accidentally in a primordial soup without an arrow of directionality is unthinkable, even sacrilegious. Accepting evolution - even theistic evolution - would be considered a capitulation of sorts because it gives currency to the alternative view: a divine agent can be dispensed of. In fact, this is what Stephen Jay Gould proposed in his *Rocks of Ages* (1999). For Gould, science and religion are two prominent rocks of ages which operate according to different principles and pursue different goals. They are “non-overlapping magisterial” (NOMA) (Gould, 1999).

NOMA seeks no false fusion, but urges two distinct sides to stay on their own turf, develop their best solutions to designated parts of life’s totality, and, above all, to keep talking to each other in mutual respect, and with an optimistic forecast about the value of reciprocal enlightenment. In other words, citing Churchill’s aphorism, to “jaw-jaw rather than to war-war” (Gould, 1999:211).

Gould’s binary proposition would be unappealing to Muslims. As the literature review illustrates, Islam is a totalizing, all-encompassing religion. The diverse voices from the evolutionary camp putting forward prescriptive models of interaction between science and religion are not commensurate with the principle of *tawhid* (the unity of God). According to this principle, no branch of knowledge can claim an autonomous intellectual space free from the dictates of religion. Another challenge for Muslims is the, at times, dissonant views of evolution. For instance, Gould maintains that the trajectory of evolution would be entirely different if the process was reset. In other words, the denouement of evolution is totally arbitrary with chance as the primary driving force. Simon Conway Morris appears to contradict this view by insinuating that, given the deep structure of this universe with conditions geared towards life, it was inevitable that life would spawn on this planet. Evolution can thus be seen as a “walk through protein hyper-space” (Ward, 2008:22). This latter view strikes a more conciliatory note which resonates with theists looking for some concession from methodological naturalists.

Clearly the response of Muslims would depend on which evolutionary model is promoted. However, the debate will be doomed to failure if evolution is touted under the banner of an atheistic triumphalism which has finally exorcised religion. The refusal to translate Richard Dawkins’ books into Arabic illustrates the above. An invitation to think in terms of an evolutionary framework in which God is not a necessary agent would open a Pandora’s Box. It would be construed as an attack against Allah and the Qur’an itself.

For many Muslims, steeped in a theocentric worldview distilled through centuries of religious tradition, this accommodation appears unthinkable. Evolution would be asking such individuals to



conceive of a universe where the generation of life was not an instant response to the divine fiat uttered at the dawn of human history but a result of mutations (errors in the copying process) on the gene level which natural selection sifts for survivability and procreation. This can present a crisis of faith for the pious Muslim: the theistic portrayal of God, whose chief claim to omnipotence is precisely his fabulous creative powers of mind-boggling complexity, is reduced to one who permitted life to evolve through a brutal struggle for survival – “nature red in tooth and claw”, as Tennyson put it. The devout Muslim would ask: where is the arrow of directionality? Can a God whose role in creation is non-existent, or severely limited, really be God? Furthermore, might not such a view gradually become a conveyor belt to atheism? Questions of this nature were instrumental in devising the interview guide.

In addition to the perceived atheism interwoven into evolution, the perceived moral ambiguities resulting from an evolutionary worldview has caused much vexation in the creation-evolution debate. In their book, *Who Speaks for Islam? What a Billion Muslims Really Think* (2007), John L. Esposito and Dalia Mogahed, (the largest study of contemporary Muslims ever done), state that “What Muslims around the world say they least admire about the West is its perceived moral decay and breakdown of traditional values” (Esposito & Mogahed, 2007: xii). For many religious people, morals are an intrinsic aspect of God’s attributes. Within such a religious universe, the philosophical conundrum of whether we need God to be morally upright is answered with an unequivocal yes. In the West, the earlier moral certitudes - firmly rooted in God - gradually eroded as relations were reordered between theology and morality. The result was a rupture where the field of ethics emerged as an independent discipline and God became ornamental rather than the source for moral goodness. For many devout Muslims, goodness is predicated on the existence of God. The jettisoning or destabilizing of God would open up the floodgates of anarchism, is the mantra often heard especially among monotheistic adherents. This Pandora’s Box is captured in Dostoyevsky’s Ivan Karamazov who argues that if God does not exist, everything is permitted. With regards to Karamazov’s statement, the American philosopher and Calvinist theologian, John Frame writes:

The course of our society suggests he’s right: we’ve grown noticeably more secular over the past thirty years, banning God from public education and the marketplace of ideas, and our culture’s moral tone has declined. Is this merely historical coincidence, or is there a profound relationship between ethics and belief in God? (Frame & Kurtz, 1996

In an interview with Justin Brierley<sup>4</sup>, presenter of Premier Radio’s “Unbelievable?” programme, which followed in the wake of a debate with John Lennox at Oxford (2008, October 21), Richard

---

<sup>4</sup> Interview available online at: <http://www.premierradio.org.uk/listen/ondemand?mediaid=%7BFFAD6F7D-9F77-4045-9416-7D92377F84C6%7D> Accessed on: 16.10.2010.

Dawkins concurs that rape, for example, is morally detestable only because of the particular and arbitrary evolution of humans. In another, and different, trajectory, it may have been acceptable just as we could hypothetically have evolved six fingers rather than five. Obviously, this line is consistent with Dawkins' view that evolution entails no moral absolutes and, yet - pushed to its logical extreme - it can easily be perceived as moral nihilism from a monotheistic perspective. The verbatim exchange is reproduced below (5:30 into the interview):

JB: But when you make a value judgement don't you immediately step yourself outside of this evolutionary process and say the reason this is good is because it's good, and you don't have any way to stand on that statement?

RD: But my value judgement itself could come from my evolutionary past.

JB: So therefore it's just as random in a sense as any product of evolution.

RD: Well, you could say that. But it doesn't in any case – nothing about it makes it more probable that there is anything supernatural.

JB: Okay, but ultimately, your belief that rape is wrong is as arbitrary as the fact that we've evolved five fingers rather than six.

RD: You could say that, yeah.

Sociobiologists assert that evolution had hardwired a sense of limited altruism into our genes. The danger inherent in such a view is that humans eventually can conclude that morality is a "collective illusion of the genes" (Ruse in Ward, 2008:293). This interpretation would further cement the moral ambiguity implied in evolution. If morality is a remnant conditioned by the need for survival millennia ago, why not undermine or discard it? This would provoke much reticence from an Islamic perspective. Evolutionary explanations of morality assume the acceptance of blind chance with no intrinsic moral goodness at its core. Dawkins calls human pity, "misfiring, Darwinian mistakes: blessed, precious mistakes" (Ward, 2008:204). For Muslims, such as Yahya (1999), such statements are extrapolated from their context to paint apocalyptic images. Yahya begins with Thomas Malthus' essay which is given a crude, reductionist twist:

In short, according to this brutal claim, some people had to die for others to live. Existence came to mean "permanent war"...Humanity has paid a heavy price in the 20<sup>th</sup> century for the dissemination of these callous views which lead people to acts of ruthlessness and cruelty...As Darwinism fed racism in the 19<sup>th</sup> century, it formed the basis of an ideology that would develop and drown the world in the 20<sup>th</sup> century: Nazism (Yahya, 1999:15-18).

Thus the moral implication of evolution is another key component which has to be addressed for the creation-evolution debate to make any headway. For Muslims and others of a religious colouration, a vital inspiration for performing good deeds (e.g. the Five Pillars) is the prospect of gaining heaven and avoiding eternal condemnation. The latter eschatological reasons for doing good also encompass the promised hope of procuring blessings in this present world (the favour of God). These contrast starkly with Dawkins' suggestion that altruism is motivated by more egoistic reasons

such as kith and kin, social approbation and the principle of reciprocity (Ward, 2008:205). Dawkins compares our “selfish genes” to Chicago gangsters who have shrewdly survived millennia of competition. He goes on to say, “I shall argue that a predominant quality to be expected in a successful gene is ruthless selfishness...Much as we might wish to believe otherwise, universal love and the welfare of the species as a whole are concepts that simply do not make evolutionary sense” (Dawkins, 1989, 2). Needless to say, such an interpretation of evolutionary altruism would severely challenge the theology of morality in Islam.

### **1.5. Aims and objectives of the study.**

Religion is a fundamental aspect of Muslim identity. The statement below gives a sense of the salience Muslims attach to Islam as a primary identity marker.

Indeed, in the Fourth Policy Studies Institute Survey of 1994, 74% of the Muslims interviewed considered Islam a very important influence in their daily lives. By contrast only 43% of Hindus and 46% of Sikhs considered their religion “very important” (Ansari, 2004:11).

Conventional wisdom would suggest that with about 70% of Muslims born in Britain, British Muslims would tend to be more secular than their parents. However, “Surveys and polls of Muslim opinion in Britain routinely suggest that young British Muslims in the 16-24 age group are religiously more conservative than their parents and grandparents” (Lewis, 2007:11). Although this is not a study which compares the views of parents and children, the fact that most of the interviewees are young is of interest. The sample population consists of Sunni Muslims residing in the UK, chiefly, but not limited to London. The nature of the topic under study requires expertise from a plethora of fields. As such, this study is interdisciplinary drawing from the field of science (mainly biology), religion, theology, history and philosophy, among others, as the very nature of the topic requires. The interdisciplinary character of this study offsets a “tunnel-vision” approach and permits a more comprehensive exploration of the topic but also raises some challenges. Such a cross-cutting venture, it can be advanced, sacrifices any depth of exploration given sheer number of disciplines informing the study. However, I contend that any analysis of a heuristic clash between religion and science is best considered with one foot in both fields. Another challenge is the need for greater flexibility and adaptation to familiarize myself with the subject matter, methods and perspectives of other disciplines.

As the earlier discussion has demonstrated, this study proceeds under the assumption that the creation-evolution debate in Islam in the UK must be explored within a context that takes

cognizance of a set of particularistic and universalistic phenomena. These include, among others, a unique British identity, a broader historical trajectory that has influenced religious interpretations as a reaction to Western modernism, a constriction of the parameters of *ijtihad* (reasoning) and the perception of evolution as a Western liberal political contrivance which seeks to undermine or eliminate belief in God. There is some overlap with other studies on the relations between Muslims and the West, albeit in a different context.

These three dimensions – perceived cultural disrespect, perception of political domination, and the reality of acute conflicts – are the filters through which many Muslim men and women view Western – especially American – actions and words (Esposito & Mogahed, 2007:125).

This multifaceted interface informs the general aims and objectives of the study outlined in the next section.

- How do Muslims feel about the teaching of evolution in mainstream education?
- To consider the influence of Islamic scriptural literalism or a constricted religious hermeneutic on the understanding of theory of evolution.
- To explore the extent to which Muslims perceive evolution as science or an atheistic/materialistic ideology.
- What is the relationship between the role of reason and Islam with regards to the theory of evolution?
- What, if any, is the link between the call for an “Islamic science” and the theory of evolution?

That medieval Muslim scholars evinced some openness to a rudimentary form of evolution was alluded to in this chapter. The next chapter looks more closely at this proposition. The relatively more liberal spirit of *ijtihad* in the “Golden Age” included, among others, respect and willingness to build on Western learning, especially Greek; an autonomous scientific method which precociously anticipated modern theories of uniformitarianism and evolution. The chapter will also trace the contours of the decline of this openness considering the influence of figures such as al-Ghazali and Qutb. The subsequent constriction of the former epistemological elasticity is studied within the framework of the tension between a Western, Cartesian rupture and an ascending Islamic orthodoxy (*fiqh*). The appropriateness of an “Islamic science” is also briefly considered.

## CHAPTER TWO

### 2.1. Beyond discourses of the “Other”.

Fukuyama (1992) perceived the fall of the Berlin Wall as the “end of history” vindicating the intrinsic supremacy of Western liberal democracy. Not long after, the American political scientist and Pentagon advisor, Samuel Huntington envisaged a “Clash of Civilizations” parasitic *inter alia* on reified religious categorizations. Much ink has flowed in response to statements such as “Islam’s borders *are* bloody, and so are its innards” (Huntington, 1996:258) and “Muslim bellicosity and violence are late-twentieth-century facts which neither Muslims nor non-Muslims can deny” (*Ibid.* 258). Bernard Lewis derogatorily portrays the Muslims as “hordes charging wildly into battle like a swarm of locusts” while the eminent sociologist, Max Weber, believed that “Islam was never really a religion of salvation’ but that ‘Islam is a warrior religion” Aslan (2005:78,79).

This attempt at “civilizational incarceration” (Sen, 2006:10) has been equally matched by Occidentalist vitriol emerging from the Arab/Muslim world. The Egyptian Muslim Brotherhood ideologue, Sayyid Qutb (1906-1966), spewed venom on the decadent West through his writings. To his mind, the West was like a gigantic brothel reeling under the subversive effects of hedonism, individualism and untrammelled materialism. This was sufficient grounds for identifying all non-Islamic societies, and particularly the West, with *jahiliyya* – a modern reference to the pre-Islamic era of ignorance. Thus, in a reversal of Said Edward’s Orientalism (Said, 1978), Occidentalist reductionism became susceptible to the charge of intellectual iconoclasm by “diminishing an entire civilization to a mass of soulless, decadent, money-grabbing, rootless, faithless, unfeeling parasites” (Buruma and Margalit, 2004:10).

In the aftermath of September 11, 2001, and the subsequent “War on Terror”, the challenge of going beyond such *simplificateurs terrible* has admittedly become more difficult, but all the more urgent. Central to this study is the task of ameliorating such deleterious simplifications by tapping into a history of intellectual cross-pollination, when Muslims in the “Golden Age” (750-1100 CE) translated Greek, Indian, Persian and Babylonian philosophic and scientific treasures into Arabic. Standing atop the shoulders of ancient giants, these Muslim scholars proceeded to enrich this inherited body of knowledge with novel insights and inventions, especially in mathematics, optics, medicine and astronomy. This amalgamation culminated in an “unprecedented and harmoniously synthesized body of knowledge – the world’s first truly international science” (Turner, 1995:2).

These developments profoundly impacted post-medieval lives and were instrumental in the evolution of the European Renaissance.

Without the Islamic legacy the development of what we know as the modern world would have been significantly different and, at the very least, would have taken much longer, so that we would today be living in many ways in a significantly earlier time (Turner, 1995:207).

This said, an objective approach that aims to examine the trajectory of Islamic tradition in light of the creation-evolution debate must simultaneously steer clear of the temptation to present a sanitized or etherealized version of events commensurate with Western notions of progress and political correctness. It is acknowledged among Muslims that the pendulum swung in the other direction in the post-medieval era and the Islamic world was gradually eclipsed by events in the Western world. The next centuries saw little contact between the two until the technologically superior armies of Napoleon rolled into Egypt in 1798 coercing the Muslim world to abruptly shake off its self-induced cultural and intellectual miasma and take notice.

As will be argued later, the Muslim world may have been enthralled with the magisterial technological prowess of the West but they detested the underpinning Christian/liberal worldview (Tibi 2009). The combined history of colonialism, imperialism, support for Israel and subsequent wars against Muslim/Arab countries cemented the perception of the West as irreconcilably inimical to Islam. The earlier “Averroist” spirit of autonomous inquiry and pursuit of scientific knowledge gave way to a pedantic hair-splitting over issues such as defining Islam in opposition to the “Other” and the revival of a so-called “Islamic science”, which I will explore later. Ramadan (2009:3) aptly articulates this contemporary sense of paralysis when he states:

Why has the innovative, bold, creative spirit of early times given way to timid approaches that only consider reform in terms of adapting to the world and no longer with the will and energy to change it? How can we explain this divide, this huge gap between the “Islamic sciences” (or “sacred sciences”) and all the “other” sciences, defining distinct and well-secured fields of authority, but making it impossible to respond adequately to the challenges of our time?

An analysis of the factors that precipitated the atrophying of science and autonomous rational inquiry in the Muslim world after the “Golden Age” (750-1100 CE) is indispensable to understanding the contemporary Muslim perception of the creation-evolution debate which is the focus of this study. Why is it that the legacy of medieval Muslims who were scientifically adventurous and relatively more advanced than their European counterparts has all but evaporated? Why have many in the Muslim world uncritically settled for creationism which is actually a distorted interpretation of the Bible?

Until recently, creationism (which will be analyzed in depth later) was associated with a particular Christian fundamentalist movement in the USA. However, a growing chorus of stakeholders in biological education are now putting the spotlight on Muslims. Dawkins (2009) for instance, voices concern at figures that show Turkey (the only Muslim nation in the survey) placed at the bottom in a survey conducted by Eurobarometer in 2005 to gauge, among others, responses to the proposition that “human beings, as we know them today, developed from earlier species of animals” (Dawkins, 2009:433). While Iceland registered 85% in favour, only 27% of Turks – deemed to be the most liberal Muslim nation - concurred. He further drives home the point that Islamic creationism is a growing problem in Britain by referring to a 2006 *Guardian* report that stated “Muslim medical students in London distributed leaflets that dismissed Darwin’s theories as false” (Dawkins 2009:436). The ubiquity of Muslim antagonism (whom Dawkins calls the “history deniers”) towards evolutionary science in the UK is again highlighted by reference to Professor Steve Jones from UCL who says, “I get feedback from Muslim school kids who say they are obliged to believe in creationism, because it’s part of their Islamic identity” (Dawkins 2009:437).

Dawkins, however, has served to polarize opinions especially as he makes no bones about his atheistic agenda. Darwinism becomes an unassailable worldview that brooks no opposition. In regards to Dawkins, McGrath (2007:43) writes that “Darwinism is a worldview, a *grand récit*, a metanarrative – a totalizing framework, by which the great questions of life are to be evaluated and answered”. In grappling with a potential minefield like the creation-evolution debate in Islam, a critical self-appraisal is imperative. The onus is on the researcher/scholar to reflexively curtail deliberate or unconscious attempts at superimposing a predetermined agenda masquerading as science. Barnes (2009) implicates the secularizing agenda of Christian theologians and other liberals for the current malaise in Religious Education. In the commendable quest for interfaith harmony, these educators committed the error of undermining religious difference as valorised by the adherents of the various religious traditions. Rather than equip the pupils with skills to navigate among the conflicting and, at times, contradictory claims of other religions, the discourse of religious unity has the unintended effect of hamstringing pupils’ ability to deal with the cacophony of truth claims characteristic of each religious tradition they encounter (Barnes, 2009).

Not only have previous attempts to shoehorn religiosity into a secular agenda failed, but as (McGrath, 2004) notes “The tides of cultural shift have left atheism beached for the time being on the sands of modernity, while westerners explore a new postmodern interest in the forbidden fruit of spirituality” (McGrath, 2004:279). Indeed, as long as Muslims, or adherents of other faith traditions, feel a constant and relentless pressure to conform to the dictates of secularism, “strident puritanical

reductionism will continue to be seen by many as a viable, if not the only, alternative” (Lumbard, 2004, xvii).

As mentioned earlier, it is salutary to the task of making sense of the current creation-evolution debate from an Islamic perspective to situate the analysis in the cross-currents of the roughly fourteen centuries of Islamic history, especially the role historically assigned to reason in Islam. This has a direct bearing on the understanding of the creation evolution debate from an Islamic perspective. As in Christianity, there has been a struggle between the role of reason and revelation in Islam which continues even today and impacts upon science. This tension is evident in the responses of the interviewees (see chapter six) who always privileged a literal interpretation of the creation texts in the Qur’an. In what follows, I will trace the contours of Islamic intellectual thought beginning with the Mu’tazilah rational tradition which saw the light of day towards the end of the Umayyad dynasty (661-750 CE) (Küng, 2007).

## **2.2. Evolutionary belief in the “Golden Age”.**

The Mu’tazilah school of rational theology reached its zenith under the Abbasids (750-1258 CE). Having adopted a new theological paradigm of rationality, they filtered topics as diverse as physics and eschatology through the lens of reason so much so that “No one in Islam had adopted Greek philosophy and the other sciences as resolutely as the Mu’tazilah”. (Küng, 2007:283). Muslims were able to access the treasures of Greek and other ancient learning largely through the efforts of Nestorian translators. Having being anathematized for a dualistic Christological heresy at the Council of Ephesus in AD 431, Nestorius was sent into exile (Olson, 1999:220-221). His followers flourished in the city of Gondeshapur, Persia, which was captured by the Arabs in AD 638. This was a truly unprecedented ecumenical effort where scholars who mastered Greek, Sanskrit and Syriac were encouraged to learn Arabic and translate ancient works under the patronage of the new Muslim caliphs (Turner, 1995:29). One such caliph was al-Ma’mun (813-833 CE) under whose patronage the celebrated Hunayn ibn Ishaq diligently translated the works of the Greek medical triumvirate Hippocrates, Dioscorides, and Galen into Arabic furnishing Arab medical students with the basic reference texts of these luminaries (Turner, 1995:132).



### 2.2.1. Uniformitarianism and evolution

There is evidence that Muslim polymaths, unfettered by stifling theological constraints, dismissed a literal reading of six days of creation in Genesis as being equivalent to six earthly days as some Christians and Jews in those days maintained. Al-Biruni (973-1048), for instance, reasons that although one might forward sound rational proofs to buttress the proposition that the world was created, “...we cannot by such proofs deduce the magnitudes of those parts, which will enable us to determine the date of the creation of the world” (Shanavas, 2005:83). This is significant in light of the contemporary assertions made by young-earth creationists, who, relying on the biblical genealogy of Bishop Ussher (1581-1656), conclude that Adam and Eve were made in 4, 004 BC. Henry Morris, the late founder of the Institute for Creation Research was convinced that the date must lie somewhere between 10 000 BC and 4000 BC years, “with the probabilities (from biblical considerations at least) favouring the lower end of the spectrum” (Morris, 1976:46). Al-Biruni further rebutted the belief in a literal 24 hour day commonly held by Jews and Christians arguing that the rising and setting of the sun accounts for the phenomenon of day and night. But since the sun and moon appeared on the fourth day “How is it possible to imagine that these days are like the days of our reckoning,” he asked (Shanavas, 2005:83). He further speculated that God initially scattered the celestial bodies with the ensuing time between creation and the present possibly spanning billions of years thus adumbrating the Big Bang theory almost by a thousand years (Al-Biruni, 1000:30)

Another Muslim polymath and arguably the most famous of Muslim philosophers, Ibn Sina (980-1037), (known as Avicenna in Latin) appears to have entertained uniformitarian views when he stated:

Mountains have been formed by one (or other) of the causes of the formation of stones, most probably from the agglutinative clay, which slowly dried and petrified during ages of which we have no record. It seems likely that this habitable world was in former days uninhabitable, and indeed, submerged beneath the ocean. Then becoming exposed little by little, it petrified in the course of ages, the limits of which history has not preserved (Shanavas, 2005:90).

Centuries before James Hutton formulated the four principles of uniformitarianism, from which Charles Lyell deduced that the earth’s rocks must have formed over vast spans of time through natural processes that are observable today, it appears that Muslim philosophers like Ibn Sina, al-Biruni and Ibn Khaldun articulated similar beliefs. Ramadan (2009:306-307) bemoans the ubiquitous portrayal of the Middle Ages in Europe as the “Dark Ages” as a historical disregard and ideological reconstruction that wilfully ignores the contributions of Muslim scholars at the heart of

Europe. Shanavas (2005:95) questions the integrity of Western historians who often begin with the Greek heritage and skip over Islamic history to the Renaissance in Europe. What is pertinent from the viewpoint of this study is that, contrary to some contemporary populist perceptions of Islam as anti-rational and stifled by religion, writings from the “Golden Age” challenge such stereotypes. Clearly, Muslims demonstrated the capacity to objectively study the natural world without pigeonholing their findings into a pre-packaged theistic framework. That this extended to the field of evolutionary biology comes as a surprise to many in the Western and Muslim world. Ibn Khaldun (d.1406), for instance, arguably the most renowned Muslim historiographer and perhaps the world’s first social scientist states in his *Muqaddimah*:

The animal world then widens, its species become numerous, and in a gradual process of creation, it finally leads to man, who is able to think and reflect. The higher stage of man is reached from the world of monkeys, in which both sagacity and perception are found, but which has not reached the stage of actual reflection and thinking. At this point we come to the first stage of man (after the world of monkeys). This is as far as our physical observation extends (Khaldun, 1980:195).

Another documented example is the East African al-Jahiz who made a living writing about scientific issues under the auspices of caliph al-Mamun in the ninth century CE. In his *The Book of Animals*, he attributes changes from one species to another to the struggle for existence that animals are perpetually engaged in.

Environmental factors influence organisms to develop new characteristics to ensure survival, thus transforming into new species. Animals that survive to breed can pass on their successful characteristics to their offspring (Masood, 2009:183-184).

In his 10th century text *The Book of the Yield*, al-Nakhshabi speculated on human origins: “While man has sprung from sentient creatures (animals), these have sprung from vegetal beings (plants) and these, in turn, from combined substances, these from elementary qualities, and these (in turn) from celestial bodies” (Masood 2009:184). In light of the above, it may not sound objectionable that John William Draper (1812-1883), a contemporary of Darwin, stated that Christian theologians were loathed to look with any favour on what he called “the Mohammedan theory of evolution which declared that human beings developed over a long period of time from lower forms of life to their present condition” (Shanavas 2005:123).

One must keep in mind that the Muslims of the “Golden Age” perhaps were influenced by speculations on evolutionary thought first proposed by Greek thinkers like Anaximander rather than accepting the sweeping claim, “Today, we know that Darwin’s theory of evolution is actually the Muslim theory of evolution” (Shanavas, 2005:123). Nevertheless, the historical sketch above unequivocally suggests that these practising Muslims (as most of the scholars of the “Golden Age” were) did not conflate evolutionary belief with atheism. In disseminating these views there is

nothing to suggest that they were espousing ideas antagonistic to their understanding of Islam. Significantly, this has parallels with the events that unfolded in the Christian world in the aftermath of the publication of Darwin's *The Origin of the Species* (1859). Far from the current stridency and high-decibel pronouncements that characterize the creation-evolution debate, not only did the Church of England accept the theory within thirty years, but it was widely accepted even among North-American conservative Christians such as Benjamin B. Warfield (1851-1921) and James Orr (McGrath, 2004:78).

Bassam Tibi (2009), in his book, *Islam's Predicament with Modernity* (2009), maintains it is incumbent upon the Islamic world to revive the spirit of Averroes (Ibn Rushd 1126-1198) if the current stagnation is to be reversed. In his view, Averroes' concept of "double truth" (*al-haqiqa al-muzdawaja*) successfully navigated between the tension-filled domains of reason and revelation. The denouement of this endeavour crystallized in a separation of "religious from rational knowledge while acknowledging the validity of both" (Tibi, 2009:66). He reiterates the urgent need for Muslims to embrace the *falsafa* (Arabic for philosophy) tradition of the "Golden Age" which catapulted the Muslim world ahead of every civilization and discard the *fiqh* (Islamic jurisprudence) orthodoxy which, in his view, triggered the decline. Furthermore, he envisages a modern globalized world harmoniously coexisting under the banner of rationalism. Religion, to his mind, cannot adjudicate in this pluralistic new age as "All religions are mostly self-righteous in their attitudes and thus prone to imposing their own views on others. Their absolutist mindset stands in contrast to pluralism" (Tibi, 2009:70). However, his arguments become vulnerable to the critique that he apotheosizes rationalism as a panacea for societal ills when he states, "...universal cultural modernity could unite a culturally and religiously diverse humanity by ranking reason as the impartial 'supreme court' (Immanuel Kant) for determining what is right and what is wrong in our knowledge" (Tibi, 2009:68).

What the above indicates is that it is perhaps not the historical trajectory of Islam which hampers a successful synergism between reason and revelation, but the often unwarranted extrapolations such as the above. Obviously, such derogatory remarks only lead to more parochialism on the part of religious adherents. A modern example of the tenacity of religious conviction surfaced when Muslim nations convened a meeting in Cairo in 1990 to amend the clause in the Universal Declaration of Human Rights granting freedom of religious conversion. The clause was expunged and freedom of religion was no longer guaranteed. The Cairo Declaration concludes:

The Islamic Shari'ah is the only source of reference for the explanation or clarification of any of the articles of this Declaration (Cairo Declaration on Human Rights in Islam, 1990).

### 2.2.2. Science in the “Golden Age”

What precisely did the Islamic scholars of the Umayyad and Abbasid era contribute to scientific thought? Faruqi (2007:466) singles out the experimental method, an indispensable component of modern science, as the greatest legacy of the “Golden Age”. In contrast to Aristotle, who wrote voluminously on physics without conducting a single experiment or Socrates who limited his studies to man alone, Muslim philosophers developed rigorous methods of observation and experimentation in the caliphates of Baghdad and Andalusia. Roger Bacon, who spoke Arabic, acknowledged this valuable heritage (Faruqi, 2007:466). That science and religion were not locked in an epic battle is evidenced by the breakthroughs achieved in this era. Al-Khwarizmi, a Persian born in the eight century, adapted Babylonian and Hindu numerals to create the mathematical discipline of *al-jabr* (Algebra) where equilibrium is attained by adding or subtracting the same quantity on both sides of an equation (Turner, 1995:47). Even the term Algorithm, familiar to modern students of mathematics is the Latin rendition of his name. Trigonometry, too, has largely been attributed to the efforts of these scholars. Turner (1995) further credits this era with the development of the world’s first hospitals in the reign of caliph Harun al-Rashid of the Thousand Nights and One Night fame in the eight century. Not only did the Muslims of this era introduce the world’s first pharmacies, but everyday words like drug, alkali, alcohol, elixir and aldehydes are derived from Arabic (Falagas et.al. 2006:1584). Ibn Sina’s encyclopaedic *Al-Qanun* (The Canon) was the standard reference text in European medical schools almost until the start of modern times. Ibn al- Nafis, a thirteenth century contemporary of the great Jewish Rabbi, Maimonides, described the secondary or lesser pulmonary circulation of blood between the heart and lungs. Though sidelined for centuries, his work was taken seriously in the twentieth century (Turner, 1995:137). Az-Zahrawi (Abulcasis) performed tracheotomy and lithotomy and was the first to use cotton and catgut in addition to weighing in on extra-uterine pregnancy, cancer of the breast and the sex-linked inheritance of haemophilia (Falagas et.al. 2006:1583).

Ibn Sina (Avicenna) who differentiated meningitis from other neurologic diseases, described anthrax and tuberculosis, introduced urethral drug, instillation, stressed the importance of hygiene, and dietetics, and the holistic approach to the patient...Ibn Zuhr (Avenzoar) who described pericarditis, mediastinitis and paralysis of the pharynx, and who pointed out the importance of drugs for body and soul (*Ibid.* 1584).

In summary, as Loo (2001:168) observes, “The history of science has shown that most of the so-called wars between science and religion were really storms in a teacup fought on an ontological turf”. According to Ward (2006:8-11), the inference that Galileo’s denunciation by the Catholic

Church was a prime example of the battle between science and religion is fictional. Not only was Galileo a devout Catholic, but the entire episode ought to be correctly perceived as a conflict between “traditional science and new science” (Ward, 2006:8). In fact, Copernicus’ (himself a Catholic) assertion that the earth circled the sun in 1543 raised no objections, and his thesis *On the Revolutions of the Heavenly Spheres* (1543) was dedicated to Pope Paul III. The dynamic, however, was altered when the consultants to the Congregation of the Holy Office (the Inquisition) made a firm stand alongside the old geocentric theory based on Aristotle who was considered the “Master of the sciences”. According to Ward (2006), this privileging of an old scientific paradigm in conjunction with Galileo’s combative stance complicated matters leading to his subsequent conviction and house arrest near his villa in Florence.

As mentioned earlier, some, like Bassam Tibi (2009), are convinced that only a revival of the *falsafa* “Averroist” spirit can renew and reform contemporary Islamic thought. Implicit in such sentiments is an assumption that the “Golden Age” promoted a worldview conducive to scientific advance - for example, openness to considering alternative explanations for the origin of life - which has dissipated now. I will consider this in the next section.

### **2.3. The orthodox ascendancy and decline of science: *Fiqh* vs. *Falsafa*.**

Autonomous inquiry and critical investigation was clearly woven into the fabric of Islamic thought in the “Golden Age”. The discussion thus far indicates that medieval Muslim scholars speculated on the origins of the earth and life in a manner which leads us to believe that they were not entirely hostile to an evolutionary timescale and development. Based on this, can one perhaps conclude that some form of epistemological openness (as in the Mu’tazilite tradition) is a prerequisite in making scientific progress? Is the much regretted “closing of the Muslim mind” a consequence of the ascendancy and subsequent hegemony wielded by orthodox schools like the Hanbalite tradition and the current global proliferation of Wahhabism? These questions will serve to inform the discussion at hand.

Critics of the aforementioned Samuel Huntington (1996) have often emphasized that, rather than a clash between civilizations, it is more appropriate to speak of a clash *within* civilizations (Sen 2006; Tibi 2009). Furthermore, Huntington’s choice of *clash* constricts the parameters of the discussion. Must encounters between or within civilizations necessarily congeal into bellicose conflagrations? The phraseology can usefully be downgraded to a *conflict* rather than a clash. This would do justice to encounters that often pan out amicably. Bearing this nuance in mind, we are unfortunately forced to speak in terms of a *clash* rather than a *conflict* within Islam itself with reference to the dominant

worldviews of the “Golden Age”. The ideological struggle between the Mu’tazilite school of rational theology *falsafa*, championed by caliph al-Mamun (d.833), and the Hanbalite traditional school of theology founded by Ahmad Ibn Hanbal (d.855), not only featured the usual persecutions and executions of opponents, but has cast a long shadow into the 21<sup>st</sup> century. It was not until the early part of the twentieth century that rationalists in Turkey, under Mustafa Kemal Atatürk first usurped state power and enforced a strict separation between religion and secular authority (Loo 2001). Intoxicated with secular zeal, Atatürk banned the use of Arabic and introduced the Latin alphabet. This single move made all Turks illiterate overnight. We must dispel notions, however, that the nature of the clashes can be analyzed using neat divisions. Any dichotomous compartmentalization of participants into progressives vs. conservatives, rationalists vs. superstitious, secular vs. religious is bound to disintegrate upon closer scrutiny. The picture that emerges is one where orthodox stalwarts like al-Ghazali, though denouncing the rational philosophers, nevertheless employed Aristotelian logic and philosophical methods in expounding religious thought much in the spirit of Augustine and Aquinas. Yet he applied tremendous pressure on rational philosophers like Averroes.

### **2.3.1. Rational theology and the Mut’azilites.**

Few scholars doubt that many of the celebrated Muslim scholars of this era harboured highly speculative theological views bordering on heresy. Central to the debate at the height of the Abbasid dynasty was whether the Qur’an was created or uncreated (Küng 2007). The Mu’tazilites were not rationalists but privileged rational theology over the literalist Hanbalites. In their zeal to safeguard the absolute transcendence of God, they suppressed and persecuted anyone in the elite apparatus of state who believed the Qur’an was eternal (a normative Islamic view). Ibn Hanbal was targeted but accounts differ as to whether he recanted or refused to break under duress (Küng, 2007: 294). Caliph al-Mamun felt buoyed in his rational theology through a dream reassuring him of the compatibility between Aristotle and revelation (Küng, 2007: 290). The conflation between the secular and religious powers was a form of “Caesaropapism”. The caliph convened and presided over Mu’tazilite discussions every Thursday and views such as that of Wasim al ‘ata’, who propounded an interim state for grievous sinners (a Muslim purgatory), was tolerated (Küng 2007). Evidently, under the patronage of al-Mamun, an atmosphere conducive to speculative theology in conjunction with a worldview that valorised the primacy of reason over revelation prevailed.

This fact is often glossed over by some contemporary Muslim scholars who offer a more idealised version of the “Golden Age”. Faruqi, (2007:461), for instance, states “This article examines how the

tenets of Islam, and the Islamic view of nature facilitated the development of science in the so-called ‘Golden Age’ of Islam; how the Western view of nature conflicts with the Islamic view”. She operates within a flawed premise that perceives the achievements of Muslim scholars in the Middle Ages from a hermetically sealed *fiqh* based tradition with statements like “In the so-called ‘Golden Age of Islam’ inspiration for the development of sciences was found in the Qur’an” (Faruqi, 2007:465). The logical outcome of such a biased premise leads to the equally flawed conclusion she borrows from Iqbal (2002): “Therefore there is a need for discourse between Islam and Western science, rooted in the Qur’an” (*Ibid.* 467). One cannot deny that many of the medieval scholars sought a harmonious synthesis between revelation and reason, but Faruqi (2007) commits the same error that Western scientists are often accused of by contemporary Muslim scholars: she fails to appreciate the enormous debt owed to the classical Greek thinkers without whose intellectual stimulation there might have been no “Golden Age” to speak of. For instance, Averroes’ claim to fame in the West lies in his incisive commentary on Aristotle which earned him the name “The Commentator”, or as Dante has put it, *che gran commento feo* (Najjar, 2001:2).

Faruqi (2007) fails to mention that the eminent Arab philosopher ar-Razi (865-925) sought no concord whatsoever between Islam and reason. “Theologians who discussed with ar-Razi claimed that he relied only on reason and rejected any authority in the sphere of knowledge, he believed in progress in the sciences and not in a prophetic message or a divine law” (Küng, 2007:368). In fact, he developed his philosophy in opposition to revelation (Küng, 2007). In addition, Ibn Rushd (Averroes) clearly elevated reason above revelation for which he was denounced as a heretic. In his writings contra al-Ghazali, Averroes reasserts Aristotle’s argument that the world is eternal and indestructible although he surmised that the masses ought not to be told this as this would obfuscate their simple minds (Najjar, 2001). Abu Yusuf al-Kindi (800-870), another luminary of the “Golden Age”, who was enamoured with Greek wisdom, was publicly flogged by fundamentalists (Loo, 2001:56). Many of these thinkers entertained esoteric neo-Platonic views irreconcilable with Islam. Al-Farabi (d.950) declared that the “One” of Plotinus is Allah who employed neo-Platonism’s hierarchical emanations to spawn existence in nine intellectual stages (Yaran, 2007). His speculative exegesis of the Qur’an led him to believe, rather curiously, that only the souls of thinkers survived while the masses were expunged. This can only be understood with reference to Plato’s elitist status accorded to philosophers. Together with Ibn Sina, he denied the physical resurrection of the dead. The latter went even further arguing that the deity was ignorant of particulars only conversant with universals (Yaran, 2007). The literature also suggests that they held somewhat unorthodox views on the Islamic understanding of predestination.

Can this openness and flexibility towards Greek philosophy at the expense of religious doctrine explain the scientific advances made in the Middle Ages? Can this line of reasoning shed some light on the widespread leaning towards evolutionary belief which contrasts sharply with current Muslim views? Indeed, these Muslim scholars *prima facie* seem to have unreservedly embraced the Prophet's exhortation to pursue knowledge even if it leads to China (Ramadan, 2009). A case can be made for such an argument based solely on the accomplishments of these scholars. If a narrow literalist tradition impoverishes scientific advance, then it can be argued that a mindset which is unshackled from such impediments is free to research, experiment and go where the evidence leads.

But such an explanation alone is inadequate when parallels are drawn from the world of early Christian theological debates where Greek thought, and especially neo-Platonism, flourished but no significant advances were made in the field of science and secular learning. Neo-Platonism propagated the view that all material bodies, be they celestial or human, are unconscious emanations of the One. The protagonists of this school claimed that bodies have devolved from this One in a hierarchical chain of stages. Bodies have travelled so far from the source that they now serve as prisons for spirits (Olson 1999:191). That their ideas infiltrated Christian theology is evident in the writings of Origen and Clement in Alexandria, as well as the writings of the Cappadocian fathers whose expositions on the Trinity carried the day at the Council of Constantinople (AD 381). As early as the third century AD, Tertullian, who coined the term *Trinitas*, complained "What indeed has Athens to do with Jerusalem? What concord is there between the Platonic Academy and the Church? What between heretics and Christians?" (Olson, 1999:54). But he himself felt no qualms in appropriating Greek philosophy in his works. One could go even further back and implicate the great Jewish thinker Philo of Alexandria (a contemporary of Jesus) in this assimilation of Greek thought into religious discourse.

The main difference between the manner Greek thought was applied in early Christianity and the Muslim Middle Ages is that the latter did not restrict it to theological speculation alone. They were willing to demarcate the religious from the natural sphere and rigorously apply knowledge gleaned from Aristotle and Galen, among others, to nature, picking up where they had left off. Conversely, they did not jettison religion in favour of reason but believed the two were commensurate, even when courting heresy. In other words, contrary to contemporary pronouncements on the theory of the "scientific miraculousness of the Qur'an", (Loo 2001; Guessom 2008), they were willing to reserve judgement on the precise meaning of Qur'anic texts and thus avoid the pitfall of pigeonholing findings in a prejudiced post-hoc reconstruction that aims to fit obscure Qur'anic utterances into science. Maurice Bucaille, a French surgeon, epitomized this flawed approach claiming that one could, in essence, rely on the Qur'an alone to discover the Big Bang theory and



the water cycle (Loo 2001). Such prejudiced and parochial approaches as Bucaillism, which will be discussed later, did not appeal to thinkers like al-Farabi, Ib Sina, Ibn Rushd or ar-Razi.

### 2.3.2. Al-Ghazali and the rational philosophers.

One figure more than any other is credited with silencing the free-spirited school of rational philosophers in Islam – Muhammad al-Ghazali (1058-1111). Accolades like *hujjat al-Islam* (the argument of Islam) and *doctor communis* (universal doctor) have been showered on him (Küng, 2007:346-347). His influence is still considerable in the Sunni world today. Al-Ghazali experienced a crisis of faith initially so powerful that he found himself in the grip of a severe depression. He could not fathom how “the people of the book” (Jews, Christians and Muslims) could uncritically swallow dogmas inherited blindly through their traditions without exercising *ijtihad* or autonomous critical inquiry. He decided to challenge *taqlid* or the blind imitation and propagation of inherited faith by rigorously subjecting all the “fetters of servile conformism” (Yaran 2007) to doubt. He went as far as speculating that consciousness can be deceived by a “reason-judge” who distorts perception foreshadowing Descartes’ “demon” and *cogito ergo sum*. Küng (2007:348) concludes, “Thus, six centuries before Descartes, a Muslim thinker states (though he could have learned this from ancient sceptics) that one can doubt almost everything, particularly material things”. Unlike Descartes, however, al-Ghazali was delivered of his “malady of scepticism”- not through rational reasoning - but through a divine light cast into his breast. Revelation trumped reason. In his *Twilight of Atheism*, McGrath (2004) makes the important point that Descartes, in striving to prove the existence of God, inadvertently undermined belief in God by virtue of the vulnerable arguments he framed. Here an interesting comparison emerges with the Western trajectory. Whereas the latter led to a “disenchantment” of the world, to borrow from Weber, al-Ghazali’s cogitations resulted in a surge of religiosity and mysticism with a concomitant decline in philosophical speculation: *Falsafa* languished while *Fiqh* gained the ascendancy (an exception is Ibn Khaldun who flourished in the fifteenth century).

Al-Ghazali purged Islam of what he perceived as heresies promoted by the *falsafa* Muslim scholars. He wrote a treatise against them (Refutation of the Philosophers) where he drew up 20 propositions contra the neo-Platonic philosophers. Three were considered unforgiveable: the belief that the universe was eternal, the undermining of God’s omniscience and denial of a bodily resurrection (Yaran, 2007). Some scholars interrogate the extent to which the aridity of rational thought as crystallized in neo-Platonic Islam alienated Muslims driving them into a more personal communion

with God (Yaran 2007). Al-Ghazali himself sensationally abdicated from his position as Professor in Baghdad, donned a coarse woollen garment and embraced the life of a Sufi. The remembrance of God (*dhikr*), purification of heart and a desire to be lost (*fana*) in God consumed his new life (Küng, 2007:353).

In summary, the “Golden Age” saw the rise of Muslim scholars who saw no conflict between science and religion. Their main objective was to build on the legacy of the Greek thinkers and unravel the secrets of nature. They proceeded on the epistemological premise that the discoveries of reason would not undermine faith but bolster it. The discussion thus far has not paid attention to issues of validity. Pertinent to this study is not whether Averroes’ eternal universe theory is sound (the Big Bang theory disproves it), but to tap into the manner in which their worldviews grappled with controversial issues. Their epistemological openness has several advantages from the vantage point of the theory of evolution which is the focus. Among others it resists the temptation to make bold and uncompromising scientific pronouncements based on a poorly informed reading of Qur’anic texts. For example, many Muslims long held the conviction that the sex of an unborn child is a mystery known only to God. The advent of ultrasound technology obviously made a mockery of this (Guessoum, 2008:413). Such blunders are all too familiar in the insular world of Christian young-earth creationism which tenaciously rejects the evidence of radiometric dating. Furthermore, rather than alienate scientists, a non-literalist religious approach leaves the door open for a potential fruitful exchange. Polkinghorne (1988) for instance, is of the opinion that the perplexing world of quantum physics, where the behaviour of electrons and photons defies interpretation, appears to push some scientists to adopt a more conciliatory tone towards religion.

Science seems to throw up questions that point beyond itself and transcend its power to answer. ...Thus a physicist such as Paul Davies, who is notably unsympathetic to conventional religion, can nevertheless write, “It may be bizarre but in my opinion science offers a surer road to God than religion” (Polkinghorne, 1988:23).

The period between the twelfth century CE and modernity witnessed a hostile divergence in western and Arab/Muslim relations spurred on by events like the Crusades, colonialism, the creation and support for the State of Israel and the current “War on Terror”, to name a few. In what follows, it is suggested that the contemporary creation-evolution debate in Islam must be filtered through this tense legacy in order to understand why attitudes towards evolution have oscillated from a rudimentary form of theistic evolution during the “Golden Age” to an implacably antithetical stance. Indeed, “Grassroots constituencies favour outright creationism” (Edis, 2008:888).

## 2.4. The controversy in the advent of modernity.

Barely a few years before the death of al-Ghazali (d.1111), Muslims who had held Jerusalem for 461 years were horrified by the aggression and intensity of Frankish knights who filled the streets with blood. Pope Urban II stood up on the rostrum in the field outside Clermont in AD 1095 and launched the Crusades calling for the Holy Land to be purged of “a race alien to God” (Karabell, 2007:87). Much ink has flowed in describing the orgy of blood that followed in the aftermath of the capture of Jerusalem in AD 1099. The knights did not pillage or rape, but indiscriminately butchered men, women, and children. Jews and even ascetic Muslim imams who had retired to live a life of piety and seclusion in Jerusalem were decimated. Historians are all too aware of the roots of the modern tension between the West and the Arab/Muslim world. “The fanatical blood-lust of the Crusaders at Jerusalem would never be forgotten” (Jones and Ereira, 1994:52,53). Indeed, this humiliation has become indelibly imprinted in the Arab/Muslim psyche. References to “Crusaders and Zionists” have become standard in some circles often thundered from the pulpit and the speeches of Osama Bin Laden.

The rise of the Ottoman Empire, which lasted until the First World War, curtailed western ambitions in Arab/Muslim lands. The capture of Constantinople in AD 1453 sent shock waves through Western Christendom. In a reversal of fortunes, the centre of Arab/Muslim aspirations, Egypt, stood defenceless and awestruck when Napoleon overran the country in 1798. The technological marvel in the shape of canons and modern military machinery provided tangible evidence of the superiority of western power. Napoleon came with an academy of scholars and did his utmost to endear himself to the Egyptians by inviting 60 *ulemas* (religious scholars) to his camp bestowing full military honours on them (Said, 1978:82). However, as Said (1978) notes, this was only an elaborate facade which was to lead to the cultural domination of Egypt. Orientalism, the study of the East, lost its innocence after Said’s analysis of the manner in which a Eurocentric lens was superimposed on Egypt (in this instance) with a view towards speaking and writing about it as an appendage to European history. The Arabs were portrayed as infantile, irrational, sensual and unable to represent themselves. Jean-Baptiste-Joseph Fourier wrote rather condescendingly in the *Description de l’Egypte* (1809-1828), “Napoleon wanted to offer a useful European example to the Orient, and finally also make the inhabitants lives more pleasant, as well as to procure for them all the advantages of a perfected civilization” (Said, 1978:85).

In exploring current Muslim attitudes to the theory of evolution, one must simultaneously keep in mind that this latter generation of Westerners were no longer possessed of fanatical visions of a New Jerusalem, but some seemed to entertain an equally abominable ideology -atheism - to the

Muslim mind. It is clear that, in reading Muslim anti-evolution literature, many Muslims (scholars included) struggle to make a distinction between atheism and evolution. Although this conflation is problematic, it is vital to appreciate the utter novelty and horror of such a belief to the devout Muslim mind where the dictates of *tawhid* (the unity and supremacy of God) permeated every sphere of society then and now. When eminent evolutionary biologists like Richard Dawkins portray faith as an existential threat, for some, the perception of scientists as atheists is cemented.

It is fashionable to wax apocalyptic about the threat to humanity posed by the AIDS virus, “mad cow” disease, and many other others, but I think a case can be made that faith is one of the world’s great evils, comparable to the smallpox virus but harder to eradicate (Dawkins, 1997:26-29).

The new encounter between East and West was thus an anomalous meeting between the secular and the religious which was bound to be dissonant. In fact, Napoleon’s Egyptian expedition came barely a decade after the bloody French Revolution which saw the “Reign of Terror”, the worship of ideals like reason, liberty and fraternity and other excesses committed in the name of a godless agenda (McGrath, 2004). Later encounters between the two trajectories were influenced to varying degrees by the effects of the atheistic philosophies further developed by the “high-priests” of atheism – Ludwig Feuerbach (1804-72), Karl Marx (1818-83) and Sigmund Freud (1856-1939) (McGrath 2004). All three actually offered a “scientific” explanation of the origin of belief (*Ibid.* 2007:77). I will argue later that as long as science - and evolution, in particular - is disseminated from within an atheistic/materialistic worldview, one must expect the grassroots constituencies in the Muslim world to intuitively make common cause with creationism as will be demonstrated in the case of Turkish creationism (Harun Yahya) and the writings of Muslim scholars like Bakar and Nasr.

#### **2.4.1. Muslim theistic evolutionists.**

When Charles Darwin (1809-1882) first proposed that all life forms share a common ancestry in the *Origin of Species* (1859), this provoked a plethora of responses some sympathetic and others hostile.

Therefore I should infer from analogy that probably all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed (Darwin, 1998:364).

The theory will be explored in greater detail in the next chapter. Although the large majority of responses in the Muslim world were dismissive, the 20<sup>th</sup> century philosopher and national poet of Pakistan, Muhammad Iqbal (1877-1938), was fascinated with Darwin’s theory. To Iqbal, the

prophet Muhammad was the perfect prototype of humanity and the goal is to attain to his stature. Grounding his acceptance of evolution in the Qur'an, he felt it furnished an excellent framework to conceive of humankind's evolution towards perfection. He actually differed with Darwin (he thought) in that he believed we are *still* evolving (Masood, 2009:184).

There is nothing more alien to the Qur'anic world than the idea that the Universe is a temporal working-out of a pre-conceived plan; an already completed product, which left the hand of its maker ages ago and is now lying stretched in space as a dead mass of matter to which time does nothing (Masood, 2009:184).

In voicing this, his views parallel those of Christian theistic evolutionists who speak of a *creatio continua* (Peters and Hewlett, 2006:123) to describe the manner in which God's creative power imparts "openness to the future that releases the present from bondage to past causes" (*Ibid.* 122). Although grounding his reasoning in the Qur'an, Iqbal, a disciple of the Sufi mystical Qadiri Order and a devotee of Wali Allah, did not shy away from challenging the status quo as evidenced in his statement "If the world doesn't agree with you, *arise against it!*" (Aslan, 2005:219). Rather than extol God for designing a perfect world with man as the pinnacle of creation, Iqbal penned poems petitioning God to perfect his imperfect creation.

Design a new pattern  
Create a more perfect Adam  
This making of playthings of clay  
Is not worthy of God, the creator

If the pattern is poor  
What does repetition achieve?  
How can the cheapness of man  
Meet your approval? (*From Iqbal's Educational Philosophy*, by K.G. Saiyidain 1938, cited in (Masood, 2007:185).

Implicit in the lament above is an acknowledgement of the flawed nature of design as Iqbal understood through Darwin's writings. Dawkins (2009, 353-370) draws attention to this conundrum citing serious design flaws such as the retina in the eye pointing backwards in humans, the awkwardness of the koala pouch pointing downwards rather than upwards (not conducive to tree-climbing) and the extravagant detour from the cranium to the larynx (voice box) via the heart undertaken by the laryngeal nerve.

In addition to Iqbal, al-Jisr (1845-1909) sought a harmonious amalgamation between Darwinian evolution and Qur'anic understanding (Peters and Hewlett, 2006:108). Like other Muslim theistic evolutionist, he found Qur'anic verses commensurate with an evolutionary paradigm which maintains that life began in a primordial watery source.

Do not the unbelievers see that heaven and earth were joined together, before we clove them asunder? We made from water every living thing. Will they not then believe? (Qur'an, 21:30).

His careful perusal of the Qur'an led him to negate the normative view that the species were fixed at origin leaving open the possibility of modifications culminating in speciation (one species evolving into a completely new species). T.O.Shanavas (2005), the Indian-born Muslim paediatrician who has been cited earlier in reference to the evolutionary beliefs of Muslim scholars in the "Golden Age", is another outspoken Muslim theistic evolutionist. To his mind "Darwin's theory of evolution is actually the Muslim theory of evolution" (Shanavas, 2005:123). Other theistic evolutionists include Nidhal Guessoum and Cafer S. Yaran from Turkey.

#### **2.4.2. Islamic creationism and the challenge of modernity.**

It would be misleading, however, to infer from the above that the majority of contemporary Muslims perceive evolution in favourable light. In recent studies done by Dr. Nidhal Guessoum, Professor of Physics and Astronomy at the American University of Sharjah, U.A.E.:

He told his audience (a conference organized by the British Council to celebrate the bicentenary of Darwin's birth) that in countries such as Tunisia, Egypt, Turkey, Pakistan and Malaysia, only 15 per cent of people surveyed believed Darwin's theory was "true" or "probably true"...They are even rejecting the fact that it should be taught as scientific knowledge (Telegraph Online, 2009).

Many (see Guessoum, 2009; Yaran, 2007; Edis, 2008 & Dawkins, 2009) are now highlighting the profound impact that the flamboyant and media-savvy Adnan Oktar, better known under the pseudonym, Harun Yahya, has had in shaping the creation evolution debate in the Muslim world. The main reason appears to be the sheer volume of literature his organization makes available through the internet. His rather lavishly decorated books which he sends unsolicited worldwide are also available in a number of Muslims bookshops. Edis (2008), an American Turk from Truman State University, assesses the chances for an amicable rapprochement between Darwinian evolution and mainstream Islam as bleak, particularly in Turkey. One prominent reason for this is the links some Muslim nations like Turkey are forging with American fundamentalist creationists in the USA. Though Turkish creationism has imported the US version almost verbatim, they part ways with respect to the age of the earth and the Big Bang theory, among others. Qur'anic allusions to a young earth are vague which leaves Muslims disinclined to accept extravagant astrophysical and geological constructions. Edis (2008:889) refers to a survey carried out in 2005 demonstrating that grassroots constituencies in Turkey favour outright creationism. 31 European countries along with

Turkey, Japan and the USA were polled. 60% of Europeans favoured evolution while 25% opposed it; the “notoriously” religious Americans came 33<sup>rd</sup> on the list while Turkey was conspicuous at the bottom with only 25% in favour. It is no coincidence that the bottom two countries (USA & Turkey) have liaised quite successfully in proliferating creationist views in their respective countries. Yahya (1999) advertises this collaboration with a number of high-definition photographs featured in his book with information about upcoming events across the country. Attendees included a Turkish government minister and ICR representatives from the creationist organization founded by the late Dr. Henry Morris.

Edis (2008) further traces the contours of the rise of creationism in Turkey concluding that there exists an “Illusion of harmony between Islam and science”. The nascent modernist/secular movement of Kemal Atatürk (himself a student of evolution) first sowed the seeds of Darwinian evolution in the educational system in the 1920s (Edis, 2008:890). The first ripples of opposition to the hegemony came in the 1970s when a minority Muslim coalition party objected to the evolutionary content in education. Paradoxically, the totalitarian dictatorship that usurped power in the mid-80s blamed the secular left-wing for the instability and took steps to appease the Islamic minority. A 1983 report spoke of the Turkish-Islamic-synthesis (Edis, 2008:890). Darwin was mentioned as an apostle of materialism and the shared descent with monkeys rejected. The ICR (Institute for Creation Research) excitedly wrote in a publication called “Acts & Facts” (1992) that the Turkish Minister for Education, Mr. Vehbi Dinçerler, contacted ICR in the mid-80s requesting “scientific” (though not biblical) literature to reverse the tide of evolution in Turkey. Professor Adam Teth, a creationist in Turkey, was appointed to spearhead the implementation of creationism (Edis, 2008:891).

Since 1998, Harun Yahya has become synonymous with Islamic creationism. Edis (2008:891) describes the movement as a modern, media-savvy, populist pseudoscience with arguments taken from Christian creationist and Intelligent Design proponents (analyzed later). One should not infer, however, from this that the Islamic tradition had no developed theology with regards to the notion of divine design or creation *ex nihilo*. Averroes, for example, wrote a treatise on the subject centuries ago that resonates in some respect with the arguments of later scholastics like Thomas Aquinas and Anselm of Canterbury. Nonetheless, the attraction of US creationism is that it offers what *prima facie* appears as a systematic exposition of the concept of creation employing terms and references drawn from the natural world sprinkled with biblical citations to give it the aura of spiritual authenticity. In addition, evolution is denounced as a pseudoscientific existential threat invented by scientists determined to retire God. Creationist literature bends over backwards to convey the message that the scientists involved in the enterprise are genuine scientists with

impeccable credentials in a wide array of scientific subjects like geology, palaeontology, physics and biology.

Maulana Abd al Haqq al Faruqi Thanvi (1863-1943), was a prolific author and eminent religious figure in modern India (Lumbard, 2004:108). He took it upon himself to address issues pertaining to Islam and modern science. In Thanvi's intimation, although the *Sharia's* express purpose is not to adjudicate on matters relating to natural science, Darwin's theory of evolution must be discarded. Not only does the theory contradict the Qur'an which unequivocally declares that man is born of human seed, but Darwin himself confessed that his beliefs were promulgated as conjecture. Thanvi is convinced that the insidious source of Darwin's invention can be traced to his atheistic/materialistic impoverishment. Devoid of faith, Thanvi continued, Darwin invented the cult of evolution as a surrogate faith. In addition, Thanvi harshly rebuked Muslim modernists for their blind imitation and regurgitation of evolutionary beliefs. In his view, since Islam *is* a faith, it is superfluous for them to seek refuge in the cult of evolution. Finally, since Darwin assumed that a species of animals evolved by stages into man, the logical consequence is that a sizeable number of individuals from this group turned into a human species instantaneously. Thanvi rejects this proposition as Islam declares that Adam was one individual. His contempt for the theory and its protagonists is captured in the statement, "In our days certain insolent, unscrupulous, and indolent people have had the temerity to suggest that Adam is the name of the ape which first turned into man. May Allah protect us from such things!" (Lumbard, 2004:109).

Before briefly assessing the views of Bakar and Nasr in respect to evolution, it is salutary to bear in mind that figures like Yahya, Thanvi, Bakar and Nasr represent mainstream Islamic views rather than the more liberal, "Westernized" Tibi, Ramadan, Edis, Yaran and Shanavas, to name a few. With reference to the latter, Barnes (2007) states:

There are Muslims who are currently engaged in reinterpreting the beliefs and traditions of Islam to fit Western models both of religion and of liberal democracy (e.g. Ramadan, 2005), with its distinction between (so-called) private and public realms, but such efforts are precisely *re-interpretations*, that is they are new and novel interpretations of materials that historically have been taken to entail the legal enforcement of Islam across the institutions of public and civil society (Barnes, 2007).

It is the authority of institutions like al-Azhar, the oldest university in the world, which is the foremost seat of Islamic jurisprudence and not Harvard or Oxford which matters to the Muslim grassroots constituencies. Tibi (2009), for instance, speaking of the 1970s states, "During the same decade I was exposed to the pain that my ideas were and continue to be unwelcome to the al-Azhar orthodoxy" (Tibi, 2009:8). He goes on to share that whereas it was possible to present a paper at the University of Cairo entitled "Islam and secularization" in 1979, this would be suicidal today (Tibi



2009, 181-182) thus confirming the heightened orientation towards conservatism and, some would say, fundamentalism. Today, he lives and works in the USA (Cornell University). Such is his legacy at al-Azhar that a visiting German diplomat stirred a row when he quoted Tibi during a lecture which the dean had to resolve. The tragic killing of the intellectual, Feraj Fuda, for disseminating secular views in Egypt in 1992, with the attendant warning to secular intellectuals to beware, is a case in point (Tibi, 2009:18). Thus secular and secularism are conflated to suggest heresy.

For Osman Bakar (1999), the intensity, scope and devastating effects produced as a result of the encounter between modern science and Islam must be identified with the beginning of the nineteenth century (Bakar, 1999:204). In a rather conspiratorial tenor, he draws attention to the pivotal role played by Christian Arab scholars and questions their motives for espousing and propagating modern scientific views with passion. He cites an Arab scholar who claimed, “In this, one can perhaps detect an unconscious will seeking not so much the ‘truth’ as the political transmutation of the Christian Arab situation in Muslim society” (Bakar, 2009:207). Bakar credits The Arab-Christian intellectual Shibli al-Shumayyil (1860-1916) with introducing Darwinism into the Muslim world along with a litany of corollaries such as positivism, naturalism and evolutionism. Through the introduction of Shumayyil’s *The Philosophy of Evolution and Progress* (1910) which explored Darwin’s theory of evolution from a social and philosophical perspective, Bakar (1999:209) believed a reductionist methodological naturalism took root in Muslim soil. Bakar proceeds to malign modern science for seeking to expound on the big issues such as the origin of life without recourse to divine role and intervention. He, like Thanvi, believed the theory of evolution to be a surrogate faith for apostates who obstinately reject conventional faith. Seeking for an explanation behind the *The Origin of Species*, Bakar (1999:238) believed it stemmed from the philosophical underpinnings of Deism: “a philosophy of nature which views the natural world as being an independent realm totally cut off from the hands of the Creator”. He concludes in relation to evolution and other related theories of the origin of life, “Their nature is such that they have the undesirable effect of weakening the faith of Muslims in their belief system” (Bakar, 1999:238).

Finally, the Islamic scholar, Seyyed Hossein Nasr, in his *A Young Muslim’s Guide to the Modern Word* (1999), focuses on the disenchanting effects that the theory of evolution has had in respect to religion. This is because the theory dislocates the whole saga of the inception, development and sustenance of life from the hands of the deity and supplants it with scientific reductionism. Citing the Qur’an, he affirms that “the origin of man is not some prehistoric animal but the divinely created primordial man who in the Islamic tradition is called Adam” (Nasr, 1999:186). Nasr (1999) laments the pervasive manner in which ideas distilled through the theory of evolutionary have been

extrapolated to inform every branch of modern learning which one can only oppose at the risk of being brushed aside as a religious obscurantist:

If evolutionism were to be rejected, the whole structure upon which the modern world is based would collapse and one would have to accept the incredible wisdom of the Creator in the creation of the multiplicity of life forms which we see on the surface of the earth and in the seas (Nasr, 1999:186).

As mentioned earlier, 1798 is a watershed year in Islamic/Arabic history although the event may not resonate with many in the West. The French departed within three years after crushing the Mameluk army that ruled Egypt but by the close of the nineteenth century, over 90% of the world's Muslims were ruled from Europe. Muslim invincibility vanquished, many Muslims pondered the theological question: how could this happen if Muslims are superior to infidels? Some found refuge in the task of harking back to an imagined pure and unadulterated past of the Qur'an, Haddith and Caliphs to find answers. The denouement of this exercise was the rise of a new wave of religious fundamentalism in the Muslim world.

#### **2.4.3. Fundamentalism as a response to atheism.**

(Harrison, 2007:319) argues that modern fundamentalism, rather than being an obsession with a pristine pre-modern past, can actually be usefully explored as an entity shaped by its *reaction* to modernity. She outlines some recurring themes that characterize religious fundamentalism: narrow parameters allocated to the role of reason in criticizing religious belief; a hermeneutics that minimizes the need for interpreting texts; a mindset that accommodates science only in so far as it does not infringe on religious belief; a rejection of pluralism with a concomitant privileging of some form of religious exclusivism; attempts to demarcate and compartmentalize the religious and political domains; leaning towards the right in politics and, finally, scepticism towards feminism and the call to interpret religious texts to effectuate greater gender equality (Harrison, 2007:320). "Religious fundamentalism" has been traced to the publication of the pamphlets entitled *The Fundamentals* (1910 & 1913) in the USA occasioned by what conservative Protestants perceived as the erosion of dearly held tenets in the Bible by schools of higher criticism such as the "documentary hypothesis" which undermined the Mosaic authorship of the Pentateuch ( *Tanakh* in Hebrew). They emphasized the inerrancy of the Bible and proselytizing to "save souls" among others.

Despite this useful lens through which we can situate the hardening of Muslim attitudes towards the West, Harrison (2007) and other scholars fail to distinctly identify the materialistic/atheistic

worldview interlacing the modern enterprise as the crux of the conflict. The thesis of Islam's incompatibility with modernity does not adequately explain why this latter encounter with the West contrasted starkly with that in the "Golden Age". This chapter has demonstrated that Islam's encounter with the West in the Middle Ages (through the agency of the Greek writings) resulted in dynamic hybridity and cross-fertilization rather than a xenophobic distancing. Theologians, caliphs and scientists felt no qualms about engaging with the world of the Greeks. The twelfth century polymath, Omar Khayyam, famous in the West for his poem *Rubbayat*, was just as comfortable working to improve Euclid's Fifth Postulate as with theology, poetry and other branches of knowledge (Turner 1995). Why were the likes of Ibn Sina, al-Farabi, Ibn Rushd and ar-Razi enthusiastic in locking horns with the great achievements of luminaries like Socrates, Plato, Aristotle, Euclid and Galen, to mention a few, while the modern encounter has been characterized by scepticism, crisis and upheavals?

This study cannot claim to answer all these questions. However, it has presented a case for exploring this problem within a framework that takes cognizance of the Muslim perception that modern science (which accounted for Western supremacy) was underpinned by an atheistic/materialistic worldview which threatened the very existence of Islam. Whereas the "Trojan horse" of atheism was denounced, the encounter with the ancient world was not perceived as inimical to the foundations of faith. Plato, after all, was famous for his World of Ideal Forms which aligned well with Christian and Islamic concepts of heaven and paradise. In his "cave allegory", Plato posited the idea that the shadows flickering on the wall of the cave were imperfect shadows of real humans outside. For Plato, every object in this world is an imperfect model of a true corresponding essence in the world of ideas. This background explains why the second century Christian apologetic, Justin Martyr "believed that Plato's teaching on eternal forms referred to the God of the Bible; that Socrates, like Abraham, was a 'Christian before Christ', and his death an example for Christian martyrs" (Dowley, 1990:94). Dawkins (2009) suspects that this "essentialism" perpetrated by Plato was responsible for procrastinating the theory of evolution.

The rabbits that we see are wan shadows of the perfect "idea" of rabbit, the ideal, essential, Platonic rabbit, hanging somewhere out in conceptual space along with all the perfect forms of geometry. Flesh-and blood rabbits may vary, but their variations are always to be seen as flawed deviations from the ideal essence of rabbit. How desperately unevolutionary that picture is! (Dawkins, 2009:22).

The views of two major Islamic thinkers, al-Afghani and Sayyid Qutb have influenced modern Muslim approaches to science. Their views will serve as a point of departure in probing modern Muslim attitudes to science. In addition, the calls for an "Islamic science" distinct from science understood as "Western science" will be considered briefly.

## 2.5. A clash of sciences? Parallels and points of departures.

Jamal Ad Din Al Afghani (1838-1897) is acknowledged to be one of the greatest Islamic thinkers. He is credited with first articulating the notion of a “Pan-Islamic Movement” at the end of the 19<sup>th</sup> century (Ziadat, 1986:15). Discerning quite early the seismic effects Western science was about to unleash on the Muslim world, he called for a thorough investigation of the nexus between religion and science. Al-Afghani was no scientist, however, but a theologian intent on defending Islam from the tidal waves of modernity (Ziadat, 1986:86). Although lacking proper systematization and a chronology, his ideas have become paradigmatic for a vast segment of the Muslim population. Al-Afghani wrote a book with the telling title *Refutation of the Materialists* in the 1880s where the topic of science and Islam was treated. According to him, given that Islam is a rational religion antithetical to mysticism, it is compatible with science. “This religion (Islam) enjoins its adepts to seek a demonstrative basis for the fundamentals of belief. Hence it always addresses reason and bases its ordinances upon it. Its texts clearly state that human felicity is the product of reason” (Fakhry, 1983:376). His zest for rationality provoked his critics to label him a rationalist. Al-Afghani argued that science crystallized through the legacy of the Islamic scientific discoveries of the “Golden Age” which was shot through with reason and religion working harmoniously in the service of mankind. Thus science is intrinsically good and its pursuit commendable. In his mind, the mantle had now been inherited by the West and, since God had permitted this transmutation, the duty of Muslims was to re-appropriate science rather like a lost possession. Al-Afghani appears to reify science as if it was imbued with magical powers to be coveted in order to conquer the world.

The Europeans have now put their hands on every part of the world. The English have reached Afghanistan; the French have seized Tunisia. In reality this usurpation, aggression and conquest has not come from the French or the English. Rather it is science that everywhere manifests its greatness and power. Ignorance had no alternative to prostrating itself humbly before science and acknowledging its submission (Keddie, 1983:102).

Furthermore, al-Afghani assumed that science was neutral, asocial and objective. He snubbed the *ulema* or the traditional Muslim scholars who consensually disdained Western science and technology. Science or what he referred to as the “useful arts of Europe” transcend borders of nation, language and religion, according to him, “Men must be related to science, not science to men” (Keddie, 1983:62).

But al-Afghani’s fascination with science did not extend to the secular philosophy underpinning it. His apotheosized depiction of science is equally matched by his denunciation of the materialistic, secular and positivistic ideology that has been fused into it. Significantly, even this most liberal and reform-minded of the Muslim thinkers of the age reserved his harshest choice of words for the

theory of evolution. He castigated Charles Darwin for propagating an evil philosophy that equated men with animals. One result of depriving humans of their divinely accorded status as God's vice-regents on earth is the tacit legitimization of every wicked act, by removing the stigma of savagery and ferocity, according to him (Keddie, 1983:148). To his mind, evolution was the sine qua non of soulless materialism. Darwin was the archetype of all madness and stupidity characteristic of secular speculative thinking.

Darwin would crumble, flabbergasted. He could not have raised his head from the sea of perplexity had he been asked to explain the variation among the animals of different forms that live in one zone and whose existence in other zones would be difficult (Ziadat, 1986:86).

Al-Afghani, then, a paragon of reform and reconciliation with the West, turns vehemently anti-evolution when appraising the relation between science and Islam. Al-Afghani's account above demonstrates that, according to Islamic epistemology, there is no rational conflict experienced in considering natural phenomena through a theistic lens. Though he champions such a view, we note the intransigence the moment evolution is brought into the equation. I turn next to the very influential figure of Sayyid Qutb.

Qutb (1906-1966) is regarded as the foremost ideologue of the "The Muslim Brotherhood" and his writings have been known to have impacted figures like Ayman al-Zawahiri, the main ideologue of al-Qaida and second-in-command to bin Laden (Herriot, 2009:182). The resurgence of Islamic fundamentalism has been linked with the publication of his book *Milestones along the Way* (1981) in which he dedicates a chapter to the relation between religion and Western science. He begins by admonishing Muslims to embrace the exact sciences such as chemistry, biology, astronomy, medicine, industry, agriculture and the science of administration including the art of war even if it is taught by non-Muslims. Citing the prophet of Islam, he reminds Muslims that it is their obligation to excel in matters relating to this earthly life (Qutb, 1981). Almost echoing al-Afghani, Qutb justifies the status of science by designating it an "Islamic invention" from the Middle Ages. However, the epistemological appropriation of modern science must not undermine the ethos of the Islamic way of life. This can easily result in idolatry, in Qutb's view. Rather than accept Western science in toto the believer must first attend to the philosophical contaminations grounded in idolatry and animosity towards religion.

Once again, and relevant to this study, Qutb singled out Darwin as the ultimate "bad scientist" (Qutb, 1981). Darwin's presumed atheism, in Qutb's mind, prejudiced his line of thought. For Qutb, Darwin forfeited the dignity of being called a scientist. Once again, the label of evil philosophy is adopted to condemn evolution. This highlights the degree of antipathy that a godless materialism

evoked to the Muslim mind. It was this denigrated materialism that was at the heart of Occidental philosophy since the Renaissance which distorted aspects of science, according to Qutb. He argued that the essence of a robust civilization was not the degree of successful adaptation of Western science, but the ability of the Muslim society to preserve itself.

Qutb is unique among modern Islamic ideologues for the manner he applied the term *jahili*. The word has its source in the Qur'an and described the heathens in the pre-Islamic world and, by extension, an epoch of ignorance. Historically, it has been capitalized upon to issue a *fatwa* (religious edict) against fellow-Muslims. The famed 14<sup>th</sup> century cleric, Ibn Taymiyya issued a *fatwa* against the Mongols who, although newly converted to Islam, followed a legal code devised by Genghis Khan and not the *shar'ia* (Herriot, 2009:186,187). In his dualist conceptual apparatus, Qutb dangerously labelled the Muslim religious establishment (*ulema*), the secular government of Gamal Abdel Nasr (for which he forfeited his life) and the wider unbelieving world as *jahili* (Herriot, 2009). In attaching the label "scientific *jahiliyyah*" (Qutb, 1981) to Western scientists who champion the theory of evolution, it appears that Qutb subsumes evolution under a fourth category of anti-Islamic institutions that must be violently overthrown as enemies of Islam.

This discussion has thus far not addressed issues of validity with regards to the obvious and problematic conflation of Darwinian evolution with an atheistic worldview (see next chapter). The objective has been to acquire some familiarity with the views of prominent Muslim voices in respect to issues dealing with the origins of life. However, as some Christian scientists point out, Darwin's own personal faith was quite ambiguous (McGrath, 2007; Collins, 2007). McGrath (2007:72) cautions that "The religious implications of a Darwinian view of life are contested. It can be interpreted in a Christian, agnostic, and atheistic manner". Admitting that Darwin had abandoned "conventional Christian beliefs", McGrath, (2007:73) argues that "there is a substantial theoretical gap between 'abandoning orthodox Christian faith' and 'becoming an atheist'".

### **2.5.1. *Tawhid* and the limits of science.**

Some familiarity with the Islamic theological concept of *tawhid* is salutary to the task of making sense of mainstream Islam's antipathy towards the theory of evolution. This will be contrasted with the trajectory of Western thought as embodied by Cartesian Dualism (or rupture). The discussion will seek to demonstrate that, for many Muslims, the suggestion that evolution can acquiesce to religious or non-religious implications is often a significant challenge because of the totalizing and homogenizing dictates of *tawhid*.

According to Bakar (1999:1), every branch of knowledge, natural or social, is necessarily recruited in the overarching objective of testifying to the principle of *tawhid* – or divine unity which is captured in the statement: *La ilaha illa' Llah* (There is no god but God). In Islam it is an aberration to conceive of an autonomous domain where knowledge can be pursued independently. Bakar (1999:2) extends this unity to the cosmic realms which link up the lower levels of reality on earth to the highest echelons of the cosmos culminating in God. Islamic ontology, as encapsulated in the concept of *tawhid*, points to a hierarchical unity and equilibrium deriving from God. Thus, any theory of knowledge (epistemology) seeking to expound on knowledge – be it natural or metaphysical – must be subsumed under the principle of *tawhid*. The Deist metaphorical notion of God as the absentee clockmaker (universe) is alien to Islam, according to Bakar (1999), who also pours scorn on Descartes for employing doubt as a *modus operandi*.

The spirit of Muslim observation and experimentation is shaped by this religious consciousness. It was not religious scepticism which inspired the success stories of Muslim experimental science. The spirit of Muslim experimentation was inspired rather by the certainty of God as the Absolute and as the source of all truths (Bakar, 1999:7).

In light of the earlier discussion of the worldview of the Islamic scholars of the “Golden Age”, Bakar’s (1999) latter statement is partially correct. The discussion demonstrates that thinkers of that era did not recoil from privileging reason over revelation, thus violating *tawhid*. Commenting on al-Farabi, for instance, Fakhry (1983:120) states “considering the role of reason in his general conception of the scheme of things, however, the inference is inescapable that it devolved upon reason, rather than revelation, to arbitrate in the conflict (i.e. between reason and faith)”. Bakar (1999) also conveniently jettisons the famous cogitations of al-Ghazali and his “malady of scepticism” centuries before Descartes. Despite these reservations, few would contest Bakar’s (1999:9) pronouncement that “In the Islamic tradition, the sense of objectivity, understood as referring to the qualities of impartiality, disinterestedness, and justice in the domain of knowledge, is inseparable from the religious consciousness of *tawhid*”.

Nasr (1999) expounds on the concept of *tawhid* through the mystical lens of the unity of humanity. According to this perspective, the oneness of God is an eternal fact which predated creation. This truth was manifested to Adam, the first human and our collective representative, who testified of its veracity to subsequent generations. Gradually, this primordial truth was lost to a large segment of posterity accounting for the plethora of religious manifestations. It is in this sense that Islam claims every individual to be a Muslim. Converts to Islam are often called *reverts* to the true religion commensurate with the notion of *tawhid*. Equilibrium of the primordial status quo is restored.

That is why the Qur’an refers to Abraham as *musliman hanifan*, that is Muslim and follower of the primordial religion, although he lived millennia before the Prophet of Islam and the

advent of the Qur'anic revelation. He is called Muslim by the Qur'an itself to affirm that the idea of a religion based upon unity is not new but is synonymous with the religious history of mankind (Nasr, 1999:4).

Furthermore, *tawhid* binds the community of Muslims (*umma*) together in a matrix-like network and sacralises the social structure. Thus the multifarious and often discordant interests of the community are integrated into a single people (Nasr, 1999:36).

The Jamaican-born Muslim convert and theologian, Dr. Abu Ameenah Bilal Philips, devotes an entire book to the pre-eminence of *tawhid* in Islam. For Philips (2004:164), the evolutionary model of religion which postulates a gradual reduction of deities as human societal structures coalesced into bigger collective units (and hence fewer gods), violates the principle of *tawhid*. He advocates a degeneration and regeneration model of religion in which man was an uncompromising monotheist at the dawn of creation but gradually degenerated into polytheism, ditheism or tritheism. According to him, so-called tribal religions have always manifested an awareness of a Supreme Being despite the pantheon of gods they may have worshipped simultaneously. This applied to *Itzamna*, the creator-god of the universe and of the Central-American Mayans; *Negwo*, the creator of the universe and spirits of the Sierra Leone Mende; *Brahman* of the Hindus and *Marduk*, the chief god of the Babylonian pantheon of gods (Philips, 2004:166). This, to his mind negates the evolutionary model that is grounded in *tawhid*. He concludes:

The Darwinian concept of organic evolution proposes that all life forms around today evolved from single-celled amoeba-like organisms. These simple life forms later developed into increasingly complex forms due to their struggle for survival. If this theory were to be directly applied to the development of religions, it would in fact support the degeneration model, which proposes that religion began in its simplest form, monotheism, but in time it changed into increasingly complex forms of idolatry as its simplicity was lost (Philips, 2004:168).

With this cursory consideration of the concept of *tawhid*, it becomes apparent that the cavalier manner in which the consciousness of God is detached from deliberations in the modern world of science is anathema to the Muslim. To the devout Muslim, reared in the tradition of *tawhid*, the suspension of "God-consciousness" from a mundane experiment in the laboratory, for example, is tantamount to idolatry as it postulates the possibility of carving out a neutral space isolated from divine omnipresence and omniscience. This would threaten the very equilibrium of the cosmos as each layer interpenetrates the other. Indeed, it is for such reasons that Islamic societies continue to resist the forces of modernity and its secularizing agenda as they perceive it.



### 2.5.2. The challenge of Cartesian epistemology.

The phrase “Cartesian rupture” aptly serves as a point of departure in describing the manner in which religion was severed from profane matters in the Western trajectory. Rene Descartes (1595-1650), often called the father of western philosophy and a prominent figure of modernity, bequeathed a two-fold legacy. He laid the foundation for an epistemology that reduced the explanation of phenomena (the interaction of particles) solely in terms of observable size, shape and motion (Mautner, 2004:150). In addition to this physico-mathematical reductionism, was “a conception of the mind as lying outside the purview of physics – a phenomenon sui generis whose nature could be grasped only from within, via introspective reflection” (*Ibid.* 150). In the *Discourse of Method* (1637), Descartes argues that the axioms of science are self-evident to rational beings because God has implanted an innate capability to recognize them. Thus, rather than jettison a metaphysical foundation, Descartes maintained that God was its guarantor.

Paradoxically, however, Armstrong (1993:301) argues that Descartes’ stated goals of expunging a sense of mystery and marvel, which he associated with primitiveness, led to the gradual disenchantment of the world and the abandonment of the idea of God. Additionally, humans, who hitherto had collectively oriented themselves through focusing on an external holy place (e.g. the tabernacle or Temple in ancient Israel), were encouraged through the Cartesian method to initiate the process through individual introspection. This was a catalyst in spawning the era of individualism, autonomy and self-reliance (Armstrong, 1993:301). Descartes became vulnerable to the charge that God had made the universe like a watchmaker and let it run itself more like a wise designer than a constant shepherd (Lindberg & Numbers, 2003:74). Needless to say, these values – woven into the fabric of modern Western societies are inimical to the notion of *tawhid* which necessitates the submission of the individual and the community (*ummah*) the oneness of God. In his *Meditations* (1641), he formulated his “Cogito’ argument” (*cogito ergo sum*) as the first principle of philosophy. From doubting his very existence, he proceeds to irrefutable knowledge via the faculty of the mind.

Perhaps the most controversial part of Descartes’ metaphysics, however, is the claim (made in the Sixth Meditation) that the nature of the mind as a pure thinking substance is entirely distinct from the nature of the body, or extended substance, and hence ‘its certain that I am really distinct from the body, and can exist without it (Mautner, 2005:152).

Indeed, although philosophy has moved away from this compartmentalization of the domains of the body and mind (Gilbert Ryle and Wittgenstein, among others, have critiqued Descartes), “...it remains true that the framework of the ‘mind-body problem’ is still very largely structured by the set of problems which Descartes uncovered about the nature of consciousness and its relation to the

physical world” (Mautner, 2004:153). Significantly, a Muslim rationalist like Bassam Tibi (2009) states in his discussions that the predicament of Islam with modernity is, in essence, a conflict of two worldviews – the former grounded in *tawhid* and the latter in a Cartesian epistemology. In contrast to what is described as an authentic “Islamic knowledge based on faith, this modern Cartesian epistemology dismisses any claim of knowledge to be absolute, regardless of whether it is based on belief or an ideology” (Tibi, 2009:65). He maintains that the Muslim rationalists of the “Golden Age” such as Farabi, Ibn Sina and Ibn Rushd were Hellenized rationalists who, in the spirit of a Cartesian epistemology that predated Descartes, unfortunately failed to trigger an Islamic Enlightenment (Tibi, 2009:239).

A definition of modernity is not easy to pin down but some tangible expressions include a conglomeration of a myriad of phenomena and circumstances such as nation-states, democratic systems of government, urbanization, secularization, faith in science, individualism, an open media, problematisation of gender, mass literacy and pluralism and the effort to organize society according to rational principles (Harrison, 2007; Andersen and Kaspersen, 1996 and Mautner, 2005). Understood within this framework, the project of modernity has been pushed by the liberal demand of our time that religion be kept quite separate from politics, law and science. For many Muslims, this has roots in a “Cartesian imperialism” antithetical to the unity of *tawhid*. Speaking of this demarcation, Talal Asad states, “...Yet this separation of religion from power is a modern Western norm, the product of a unique post-Reformation history” (Asad, 1993:28).

### **2.5.3. “Islamic science?” Attempts to chart out a new course.**

Some Muslim scholars, disillusioned with the dualistic model of Western thinking, have opted to invest in what they refer to as “Islamic science” to distinguish it from modern science. Broadly speaking, it is a shift in the centre of gravity from a science based on empirical validation of scientific truth to another that derives legitimacy through the Qur’an (Loo, 2001:57). The foremost protagonist of this movement is surprisingly a Catholic Frenchman, Maurice Bucaille, whose version of Islamic science is often labelled “Bucailism”. In his essay on “The Bible, the Qur’an and Science”, Bucaille contends that every statement in the Qur’an that addresses issues pertaining to nature is in harmony with discoveries unearthed through the scientific method. Bucailism gave impetus to a string of Muslim scientists who suddenly “discovered” the theory of relativity and the Big Bang nestled in the pages of the Qur’an. Others like Manzoor-i-Khuda (1983) “marshalled

evidence from the Qur'an to support current theories on the water cycle of life, geological development of the earth and development of the biosphere" (Loo, 2001:57).

A very disturbing tendency in this branch of Islamic science is that many of its followers reject the modern theory of evolution based on Darwinism. Muslim writers who argue against Darwinism recycle the same flawed "scientific" arguments used by creationists of the Christian faith, for example the missing links in the paleontological record, the statistical improbability of evolution and the view that the concept of evolution violates the Second Law of Thermodynamics (Loo, 2001:58).

Loo (2001) critiques Bucaillism for its post hoc reconstructive approach. Rather than develop a rigorous methodology that sieves the Qur'an for scientific truths, it works backwards from the established truths to fit findings into obscure passages. The failure to produce one prediction is also telling. Besides Bucaille, the aforementioned Seyyed Hossein Nasr has also endeavoured to create a new scientific epistemology inspired by Islam. According to "Nasrism", human reasoning has a twofold component – one that is strictly analytical while the other is intuitive. The former is constricted by external analysis and must rely on the latter which is illuminated by the Divine Spirit (Loo, 2001:58). "To summarize, Nasrist Islamic science attempts to integrate the two types of *yaqin* (certainty) and therefore is simply an attempt to fuse the empiricism of science with Islamic faith" (Loo, 2001:58).

In contrast, some Muslim scholars interrogate the need for an Islamic science. Abdus Salam, who won the Nobel Prize in 1979 for Physics, disparaged the use of such phraseology. He was generally in favour of delineating the dimensions of religion and science although a practising Muslim himself. Speaking of the accomplishments of the nations of the Far East, he said:

These societies are not seduced by slogans of "Japanese" or "Chinese" or "Indian science". They do not feel that the acquiring of science and technology will destroy their cultural traditions; they do not insult their traditions by believing that these are fragile (Loo, 2001:56).

In a similar vein, Tariq Ramadan (2009) destabilizes references to "Islamic science". He notes that contemporary Islamic thought evinces a paranoia-like scepticism of a constructed "Other" which has been equated with the West. That such labels are distorted, formalistic and even driven by mercantile concerns is evident in labels such as Mecca Cola, Zem Zem Cola, Medina Cola and "Fulla, the *hijab* clad doll, an Islamized duplicate of the Barbie doll complete with a line of accessories that, like it, is made in China" (Ramadan, 2009:263, 264).

This chapter has critically engaged with the broad contours of the evolution creation debate in Islam within the framework of the relationship between Islam and science in the last fourteen hundred years. The discussion suggests that many of the celebrated scholars of the "Golden Age"

like Ibn Sina, Ibn Rushd and al-Farabi (and Ibn Khaldun who lived much later) upheld beliefs that appear to crudely anticipate the modern theories of uniformitarianism and evolution. Significantly, their apparent flexibility in engaging with Greek learning indicates some epistemological openness. It is contended that (if the above is settled beyond reasonable doubt) this is significant in at least two ways: it would underscore the assertions that the “Golden Age” was an era when a high degree of autonomous critical thinking was the norm rather than the exception and, secondly, (and relevant to this study) that there was a period in Islamic history when a form of theistic evolution was acceptable with the situation reversed in modern times.

This chapter also highlighted the outline of the subsequent muzzling of the so-called rational philosophers spearheaded by al-Ghazali. The encounter between the Arab/Muslim world and the West since 1798 was explored. We observe that whereas the Islamic world was eager to acquire Western science and technology, they were repulsed by what they perceived as the materialistic/atheistic worldview underpinning it. In particular, the theory of Darwinian evolution was the subject of much condemnation. Some of the root tensions become clearer when one studies the historical trajectory of Islam and the West employing the concept of *tawhid* and Cartesian Dualism.

The next chapter will seek to explain the various positions encountered in the creation-evolution debate and show the discrepancies between some of the assumptions voiced in this chapter and what the various stances actually declare. What does the theory of evolution really say? What is creationism and in what way does the Christian fundamentalist view differ from that of creationist Muslims? These are some of the questions considered. Furthermore, the chapter briefly looks at the acrimonious history of the creation-evolution debate played out in US courts from the Scopes Trial (1925) to *Kitzmiller vs. Dover* (2005). The denouement of these litigations was the privileging of a narrowly defined scientific naturalism. The chapter argues that the privileging of scientific naturalism as the sole philosophical arbitrator in the final outcome in *Kitzmiller vs. Dover* (2005) may have further strained rather than ameliorate the tension between science and faith.

## CHAPTER THREE

### 3.0. Introduction

Jacques Monod once remarked “Another curious aspect of the theory of evolution is that everybody thinks he understands it” (Dawkins, 1989:18). This conundrum was demonstrated in the previous chapter where, among others, Muslim scholars like al-Tharvi, Bakar and Nasr uncritically assumed that the theory of evolution deliberately sought to supplant the Deity with a scientific reductionism. Their harsh denunciation of Darwin as the ultimate bad scientist appears incongruent with the fact that Darwin appeared genuinely perplexed at the notion that his theory should offend the religious sensibilities of anyone. In the sixth edition of *The Origin* Darwin states:

A celebrated author and divine has written to me that he has gradually learnt to see that it is just as noble a conception of the Deity, to believe that He created a few original forms capable of self-development into other and needful forms, as to believe that He required a fresh act of creation to supply the voices caused by the action of His laws (Bragg, 2006:148).

Darwin was no rabble-rouser, and a number of commentators have opined that the long gestation period before the publication of *The Origin* indicates a reluctance to stir up any commotion (Bragg, 2006:140). This chapter is an attempt to approximate the current official or mainstream views of the relevant positions encountered thus far. This illumination, it is hoped, will serve as a useful barometer to gauge the degree of fidelity in relation to the understanding of the theory of evolution, creationist and intelligent design positions. Emphasis must be laid on the word *approximate* as the literature evinces some disagreements on key issues. As an illustration of differing views, Dawkins believes the war between gene lineages is vital and natural selection is given pride of place, whereas the late Stephen J. Gould – from his perspective as a palaeontologist – believed that luck, not fitness, was more central as evidenced by the lottery of mass extinction (Sterelny, 2007:10-14). They agree, however, on the main facts of evolution.

With regards to creationism, as was previously mentioned, Islamic creationism of the Turkish ilk is the brain child of US creationism. As such, I will look closely at the views emanating from this school of thought, particularly that of its modern founder, Henry Morris. The contours of the creation- evolution debate are traced through the major court cases from The Scopes Trial (1925) to *Kitzmiller v. Dover* (2005). It will be evident that the outcome distilled through these legal entanglements has had vital effects on the nature of the debate. The most prominent is the privileging of a poorly interrogated scientific naturalism as the only permissible philosophical approach in matters of scientific inquiry. It is argued that this shifts the epicentre of the debate from

that of creation-evolution to one between worldviews – the naturalistic/materialistic pitted against the religious worldview. Needless to say, this has significant bearing upon Islamic perceptions of the very nature of the debate and could explain the unconventional alliance between American creationists and their equally zealous Turkish counterparts. However, since Islamic creationism diverges from the US version in some important aspects like the age of the universe and an acceptance of the Big Bang theory, this will warrant a separate treatment.

Commensurate with the objective of this study is the approximation of stakeholders' worldviews with reference to matters of origins and the manner in which they arrive at such understandings. This is contingent on the interplay of a number of factors: the degree of familiarity with the theory of evolution; the level of hermeneutic flexibility in interpreting religious texts on creation and the extent to which evolution is perceived as dictating the espousal of an atheistic worldview, to name a few. In sifting the chaff from the wheat the task of determining what belongs in the realm of science and what constitutes ideological investments is of utmost importance. This is why I have elected to interlace the theory of evolution and the belief in creation with a segment discussing ideological investments such as eugenics, Dawkins' self-replicating 'memes' (Dawkins, 1989), and, on the other hand, creationist polemic condemning evolution as a conveyor belt inexorably leading to secularism, relativism, alcohol abuse, homosexuality and even terrorism (Dixon, 2008:90). There is a need to address the historical baggage that has been erroneously conflated with the biological theory of evolution as the quote below elucidates:

Unfortunately, the end result is that in the public consciousness the actual meaning of the label given to the theory itself changes, and so 'Theory X' becomes socially transformed into 'Theory Y' with all kinds of philosophical barnacles attached to it. So we have to keep knocking off the barnacles and allow the scientific theory to do the job for which it was intended (Alexander, 2008:174,175).

I turn first to the biological theory of evolution beginning with a brief historical review culminating in the publication of *The Origin* before arriving at our modern understanding of the theory (neo-Darwinism).

### **3.1. The Theory of evolution**

As the last chapter has demonstrated, rudimentary allusions to evolution from atavistic forms of life were floating around for centuries. The Greek philosopher, Anaximander, speculated that animals could change from one form to another. Muslims like Ibn Khaldun also speculated along similar lines. Significantly, *The New Encyclopædia Britannica* (1998) states:

Closer to modern evolutionary ideas were the proposals of early Church Fathers like Gregory of Nazianzus and Augustine, who maintained that not all species of plants and animals were created by God; rather, some had developed in historical times from God's creations (Evolution, 1998:855).

It was the implausibility of housing all living creatures in Noah's Ark which precipitated the above considerations for these Church Fathers of the early Catholic era. Jean-Baptiste Lamarck in his *Philosophie Zoologique* (1809) innovatively asserted that evolution occurs over eons and culminates in man. He argued erroneously that an organism's use of an organ or structure tends to improve it whereas disuse renders the organ obsolete. He further hypothesized that these modified characteristics were hereditary but this was completely debunked later. Despite these flaws, "His doctrine of continual successful adaptation to an organism's needs was one of the ideas which impressed Darwin" (Bragg, 2006:132). More importantly, from the viewpoint of evolution, Lamarck rejected the immutability of species and recognized the influence that environmental factors like the paucity of food had on the evolution of species (Gribbin and White, 1997:46). Only Darwin ultimately managed to come up with a comprehensive theory of evolution adequately buttressed by solid research.

Darwin's early career began with a religious odyssey that saw him sign up to the Thirty-Nine Articles of the Church of England where he studied mathematics and theology with a view to joining the clergy. However, a passion for beetle-hunting rather than Bible-reading led him to join the *HMS Beagle* in 1831 "as a companion to the ship's captain, Robert Fitzroy" (Dixon, 2008) who would later stand up, Bible held aloft, and malign Darwin's theory of evolution (Dixon, 2008:74). The voyage of the *The Beagle* lasted for five years and Darwin returned to England with an immense booty that included, among others, finches, mockingbirds and turtles. Darwin sent some mockingbirds to the ornithologist, John Gould, to ascertain their taxonomy. The Swedish botanist, Carolus Linnaeus' (1707-1778) hierarchical classification system of plants and animals was employed to determine the species type. Linnaeus believed in the fixity of the species but Darwin soon found reason to interrogate this assumption as Gould struggled to classify and "tell the species apart from the subspecies" (Bragg, 2006:127). "Logically, therefore, if species were not a series of perfect individual replications, then the 'transmutation' of one species into another was a possibility if, say, one subspecies had become isolated from another" (Bragg, 2006:127).

The tremendous variations in the species caused Darwin to ponder why oceanic islands such as the Galapagos hosted strange and unbalanced floras and faunas as opposed to continental assemblages. The field of biogeography has confirmed that oceanic islands like the Juan Fernandez group have a number of bizarre and efflorescent forms of endemic life unique to the islands but, and equally baffling, one cannot find "a single native species of amphibian, reptile, or mammals – groups that

are common on continents throughout the world” (Coyne, 2009:95). Darwin theorized that this phenomenon could only be explained by evolution and not special creation. Frogs and mammals (except bats that could fly across water bodies) could not swim across from the nearest continental mainland which explains the paucity of species on oceanic islands which are relatively younger. The few that successfully migrate, on the other hand, experience rapid speciation or “adaptive radiation” which explains John Gould’s difficulty in classifying Darwin’s mockingbirds. Darwin concluded, “Such facts as the presence of peculiar species of bats, and the absence of all other mammals, on oceanic islands, are utterly inexplicable on the theory of independent acts of creation” (Darwin, 1998:360). Although inhabiting similar ecologies (e.g. deserts of Africa and of the Americas) why did the species appear so similar in form but demonstrate other, more fundamental differences? A good example is the marsupials of Australia and their placental mammal equivalents in South America. The pressures of convergent evolution upon species living in similar habitats results in adaptations leading to closer resemblances however superficial they may be (Coyne, 2009:101).

A definition of evolution germane to the task at hand will help to propel the discussion forward.

In essence, the modern theory of evolution is easy to grasp. It can be summarized in a single (albeit slightly long) sentence: Life on Earth evolved gradually beginning with one primitive species – perhaps a self-replicating molecule – that lived more than 3.5 billion years ago; it then branched out over time, throwing off many new and diverse species; and the mechanism for most (but not all) of evolutionary change is natural selection. (Coyne, 2009:3).

In order to soften his readers to the idea of nature acting as a selecting agent over enormous periods of time, Darwin, who was conversant with pigeon fanciers and horticulturists, highlighted the role of artificial selection in accomplishing astonishing variations in a relatively short span of time. If human breeders can effectuate transmutations such as a wolf becoming a Pekinese, or a wild cabbage a cauliflower, then the non-random survival of wild plants and animals can do the same over millennia (Dawkins, 2009:42). Eukaryotes (animals, plants, and fungi) share a fundamentally similar physical basis of inheritance. Darwin was unaware of the mechanism of inheritance we now call genes which was the crucial contribution of the monk, Gregor Mendel. In 1953, James Watson and Francis Crick demonstrated the double-helix structure for DNA and identified it as the mechanism through which genetic information is transmitted.

A number of explanatory components have thus far fallen into place to effectuate evolution: random genetic mutations provide natural selection with raw material for non-randomly selecting the favourable mutations and transmitting them to progeny. However, as McGrath (2007:35) notes, evolutionary biology has yet to explain whether natural selection occurs at the gene level, the level



of individual organisms or at the level of kin groups. That there is a debate raging in this sphere will become amply clear when the views of Dawkins and Gould are explored later. The process of DNA copying in cell-division is not error-proof. Random mutations do occur and these serve as the raw material for non-random natural selection to work on. For instance, chance mutations caused olfactory genes, essential for a heightened sense of smell in animals, to shut down in humans (Dixon, 2008:37).

It may be worth the while to elaborate on the olfactory gene to demonstrate human evolutionary history employing a neo-Darwinian synthesis. Mammalian genomes feature about 1,000 genes related to smell. Significantly, 63% of olfactory genes involved in smell are switched off in humans while the remaining approximately 300 genes are still functional. A comparison of mammal DNA sequences reveals the precise location and time (using a molecular clock) when the olfactory genes became defunct or mutant (Alexander, 2008). This means that, rather than weed out the malfunctioning or decapitated olfactory genes by the filtering process of natural selection, they are carried along as pseudo-genes “like derelict machinery as a vivid reminder of our evolutionary past” (Alexander, 2008:204). Whereas the olfactory gene is functional in chimpanzees, orangutans and gibbons, it is carried along to humans with a G to T mutation (nucleotide bases in DNA are abbreviated to A, C, G, and T). The comparison below shows that the transposition of the gene in the eleventh triplet of bases GAA (glutamic acid represented by the alphabet E) in humans has mutated to TAA which has been encoded as \* or a stop signal.

Human	MANENYTKVT*FIFTGLNYN
Chimpanzee	MANENYTKVTEFIFTGLNYN
Gorilla	MANENYTKVTEFIFTGLNYN
Orangutan	MANENYTKVTEFIFTGLNYN
Gibbon	MANENYTKVTEFIFTGLNYN

*Source:* Alexander (2008:206).

Alexander (2008:206) concludes that about 6 million years ago, a hominid ancestor passed on a mutation that changed the G to T in the entire human population. This is visibly evident in our genomes “which are tattooed with their evolutionary past”. Speaking of these truncated jumping genes which are littered in mammalian genomes, Francis Collins, the leader of the Human Genome Project and a practising Christian, unequivocally declares:

Unless one is willing to take the position that God has placed these decapitated AREs (ancient repetitive elements) in these precise positions to confuse and mislead us, the

conclusion of a common ancestor for humans and mice is virtually inescapable. This kind of recent genome data thus presents an overwhelming challenge to those who hold to the idea that all species were created ex nihilo. (Collins, 2007:136).

Thus far this chapter has endeavoured to represent the plain facts of evolution as expounded by most biologists. Fundamentals aside, Dawkins and the late Stephen J. Gould have clashed “heatedly on the nature of evolution” (Sterelny, 2007:7). The reviews for Sterelny’s book, with the telling title, *Dawkins vs. Gould: Survival of the Fittest* include phrases that refer to their disagreements as a “savage battle” and the debate as “notorious for its intensity”. The differences are legion but I will highlight a few. As mentioned earlier, Dawkins is preoccupied with the manner in which natural selection acts on gene lineages which compete against each other in bringing about beneficent changes in vehicles with a view toward enhancing their rates of replication. Gould demurs. To his mind, “Selection acts on organisms in a local population. But in theory and practice, selection acts at many levels” (Sterelny, 2007:169). As Beattie (2007:35) points out, Gould has provided a rather radical critique of Darwinism by suggesting that life forms have become less and not more complex. Not only is natural selection less important to Gould, but he is highly critical of biologists who too readily attribute everything to adaptation through natural selection. Gould accuses Daniel Dennett of an ‘ultra-Darwinian’ strand of evolutionary thinking; of believing that just about every characteristic of every organism is shaped by natural selection” (Sterelny, 2007:67,70). Thornhill and Palmer’s assertion that sexual rape and violence is an adaptation without validating the claim (*Ibid*: 2007) lends succour to Nasr Hossein’s objection to the manner in which Darwinism has been extrapolated to inform other branches of learning. Furthermore, Gould is convinced that if the tape of life was replayed, the trajectory of evolution would be dissimilar to the current one. Dawkins, on the other hand, aligns his views with Simon Conway Morris who sees evolution recurring along the same lines as the current one. In addition, Dawkins and Gould hold contrasting views on the definition of progress. Whereas Gould perceives complexity as evidence of progress, Dawkins emphasizes the degree of successful adaptation as progress (Sterelny, 2007:148-150).

Significantly, though, and commensurate with the objective of this study, Sterelny (2007) zeroes in on the worldviews of Dawkins and Gould to help us better understand the reason for their mutual hostility. Dawkins worships science perceiving it as the only legitimate medium which illuminates the mysteries of the world. To him, religion has no authority to adjudicate on issues of morality or values. He conceives of religion as a “meme” that infects others much like a malicious virus of the mind which is passed on to future generations. Dawkins is untouched by postmodernism. Conversely, Gould, according to Sterelny (2007), hates socio-biology as “scientific hubris” that dangerously encroaches upon other domains. Gould eschews any notion of unifying or synthesizing

science and religion under any feasible model. He borrows a term from Catholic discourse to envisage the ideal relationship between science and religion – NOMA.

I propose that we encapsulate this central principle of respectful non-interference – accompanied by intense dialogue between the two distinct subjects, each covering a central facet of human existence – by enunciating the Principle of NOMA, or Non-Overlapping Magisteria (Gould, 1999:5).

Some of these latter thoughts will inform the discussion in the next section. By looking at the “barnacles”, to borrow from Alexander (2008), that have muddled the waters of evolution, it will be easier to adjudicate on statements made in regards to evolution in the previous chapter, and with a view to pronouncements made by the Muslim interviewees.

### **3.1.1. Evolution and ideological investments.**

Darwin initially entitled his book *An Abstract of an Essay on the Origin of Species and Varieties through Natural Selection*. The Edinburgh publisher, John Murray, transmuted the title to *On the Origin of the Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. Bragg, (2006:135, 141,142) demonstrates the plethora of ways in which this unfortunate change was capitalized upon by ideologues to misconstrue evolution. Karl Marx found in *The Origin* a robust underpinning from the world of natural history to reinforce his views on the historic class struggle between the capitalistic bourgeoisie and the working class proletariat. Francis Galton (1822-1911), Darwin’s relative, inspired by evolution, took the liberty to propagate the theory of eugenics which posits that selective breeding must be coercively applied to humans with a view towards encouraging the educated classes to reproduce more, while those deemed unfit to bear children were weeded out through coerced sterilization (Beattie, 2007; Bragg, 2006). Social Darwinism “refers to the application of evolutionary theory to explain the development of superior and inferior cultures and races” (Beattie, 2007:26). Looking to Darwin for intellectual respectability, countries like Sweden, Germany and even the USA practised sterilization well into the twentieth century. Though Darwin was a man of his time, harbouring derogatory Victorian views affirming the existence of “savages” with “low morality” (see 1.2.3), his theory has been misappropriated by some to justify beliefs and actions which he would have condemned.

Darwinism was also misappropriated to justify the excesses of greedy capitalists. Andrew Carnegie reported that W.G. Sumner, an academic, was of the opinion that “millionaires are the product of natural selection” (Brag, 2006:142). Huxley championed the phrase, “survival of the fittest” which filled the mind of a young Hitler with apocalyptic visions of a fatal “race-war” between the sons of

Japheth (Germanic peoples) and the sons of Shem (Jews). Ironically, Bragg (2006) himself, though decrying the misuse of evolution, seems unable to restrain himself from the temptation to hazard a speculative interpretation of evolution when he states: “In some ways Darwinism more properly underpins the new age of Gaia theory, emphasising the common heritage, the interconnections, the oneness of the planet, just as some early philosophers thought the Earth itself had a soul” (Bragg, 2006:142).

### **3.1.2. The Selfish Gene.**

In *The Selfish Gene* (1976), Dawkins takes the bold step of introducing the notion of “memes” as cultural replicators in a manner analogous to genes. Thus, a meme is “a unit of cultural transmission or as a unit of *imitation*” (Dawkins, 1989:192). A litany of memes is provided: tunes, ideas, catch-phrases, clothes, fashions, and ways of making pots or of building arches. Their preferred modus operandi for propagation is allegedly by leaping from brain to brain utilizing the mechanism of imitation (*Ibid*). Dawkins embarks on a cursory conjectural odyssey in order to pin down the enduring appeal and survival value of the meme that is responsible for conjuring up the delusional concept of God. He meanders into the territory of psychology in pursuit of the elusive “God meme” and attributes its replication success to the placebo effect it generates by holding out the promise of a glorious after-life.

The “meme theory” has been seized upon by Dr Susan Blackmore (Blackmore, 1999) for instance, who attributes figurative agency to the memes whose “actions” are purposive. Fields as varied as the evolution of the brain, the emergence of language, altruism, sex and religion are ambitiously explained under the dubious framework of memes competing for replication (Jahoda, 2002). Blackmore (1999) and the philosopher Daniel Dennett (1995) – who advocated a so-called “science of memetics” - seem undaunted by the burden of proof to demonstrate the existence of “leaping memes” which has even extended to the foundation of a *Journal of Memetics* (Jahoda, 2002:56). Dennett makes an analogy between genes and memes arguing that, like genes which have no foresight, memes also display no foresight. An example is the way Latin morphed inadvertently into the Romantic languages Spanish, Portuguese, French, Italian and other subsidiaries (Dennett, 1995:78,79). How useful is it to employ biological metaphors in studying cultural phenomena?

Cultural anthropologists such as Maurice Bloch (2000) have argued that the gene-meme analogy is fundamentally flawed because “culture” - whatever it is - cannot be conceptualized as discrete bits of information in the same way that genes can and because the transmission processes are sufficiently different to undermine the model. Philosophers of biology such as Sterelny and Griffiths (1999: 332–4) reach a similar conclusion (Walter, 2007:692).

Dawkins describes faith as “blind trust, in the absence of evidence, even in the teeth of evidence” (Dawkins, 1989:198). But as Percival (1994) notes, this contradicts the copyability of the “God meme” as the proselytizer, in spreading the word, cannot escape a counter-criticism. This would undermine the “blind trust” hypothesis. If faith is blind, how do conversions occur? Dawkins opines that this is due to the infective influence of a Wesley, Jim Jones or a St Paul. But this only bolsters Percival’s point that “this is an admission that the first faith was not blind” (Percival, 1994:279).

### 3.1.3. Chance and evolution.

Creationists, too, have transgressed in this arena. Yahya (1999), in his polemic, *The Evolution Deceit: The Scientific Collapse of Darwinism and Its Ideological Background*, makes the unsubstantiated statement, “On the other hand, he (Darwin) invited people to abandon their religious beliefs by denying creation, and thus undermined all ethical values that might prove to be obstacles to the ruthlessness of the ‘struggle for survival’” (Yahya, 1999:16). I do not need to labour the point that Darwin extended no such invitation implicitly or explicitly. A common misconception among creationists is that evolution is driven by blind chance on a metaphysical plane. The Norwegian Christian creationist, Kristian Kapelrud (2000:41), in a section entitled “How would you answer this, Darwin?” (translation from Norwegian to English mine), poses a set of three questions, the last of which translates approximately:

Schools and the media teach us that we are the result of an “incidental accident”. We live because we have won the “the struggle for existence” – the fittest survive. Is it strange that the norms and rules in society are breaking down? Is it strange that wars ensue –struggle for existence? What is the meaning of life – if one is ultimately just a “wandering chemical-bomb?” (Kapelrud, 2000:41).

In dispelling such obfuscations, Alexander (2008:132-134) is at pains to negate the notion of chance as understood within creationist paradigms. In evolution, chance may refer to events that are predictable in principle but not in practice. Chance here is contingent upon thorough knowledge of every detail including the environment before theoretical predictions can be made. Given all the information in regards to each of the millions of sperm racing to fertilize an egg, including the environment, we could point out the winner (Alexander, 2008:133). Thus chance is employed here, not to plead utter ignorance and helplessness, but to highlight the extreme complexities involved in pronouncing results with any degree of certainty. Some have incorrectly deduced from the title of Dawkins’ book, *The Blind Watchmaker*, that evolution is a theory of chance, but the preface makes it abundantly clear that this is a myth. Chance, in evolutionary terms, should not be conflated with

metaphysical chance – the universe has no meaning or purpose as Kapelrud (2000) presupposes. As Dawkins (2009:35) himself points out, mutations on the gene level maybe accidental but natural selection is a non-random process ultimately pregnant with the idea of progress from simple to more complex life forms, which leads Alexander to state “So it is perverse to deny some form of directionality to the arrow of biological time” (Alexander, 2008:323). Gould, in explaining what Darwin meant by “chance” states that the word “contingency”, favoured by historians today, was not in common currency in Darwin’s time (Gould, 1999:199).

### **3.1.4. Evolution as the “creation-myth” of our age**

Both creationism and scientism (the veneration of science at the expense of its methods) are distortions of proper science underpinned by parochial worldviews. The philosopher, Mary Midgley (1985), who famously described evolution as “the creation-myth of our age”, argues that the writings of evolutionists like Jacques Monod, Dawkins and their acolytes unveil a particular ontological worldview. Monod, for example, believes that science subverts every mythical or philosophical ontogeny whether predicated upon the aborigine tradition or dialectical materialist one. Stripping off the values and beliefs accrued through these traditions, science, Monod asserts, will wake man:

[...] out of his millenary dream and discover his total solitude, his fundamental isolation. He must discover like the gypsy, he lives on the boundary of an alien world; a world that is deaf to his music and as indifferent to his hopes as it is to his sufferings or his crimes (Midgley, 1985:2).

In his introduction to the 30<sup>th</sup> anniversary edition of *The Selfish Gene* (1976), Dawkins seems genuinely appalled at reactions to his book. A reader from Australia shared that the book undermined his spiritual outlook on life and precipitated a personal crisis. A foreign publisher of the book was so jarred by the “cold, bleak message” (Dawkins, 1989: xiii) that he couldn’t sleep for three nights. Significantly, Dawkins is quizzed by these responses accusing him of promoting nihilistic pessimism and hastens to add, “Presumably there is indeed no purpose in the ultimate fate of the cosmos, but do any of us really tie our life’s hopes to the ultimate fate of the cosmos anyway?” (Dawkins, 1989: xiii).

The question one must ask, though, is: does it necessarily follow from evolutionary biology that there is no purpose or meaning in the ultimate fate of the cosmos? Much that is accorded the veneer of impartial and dispassionate scientific study is often an apriorism that has steered off course from its legitimate domain of inquiry. It is these barnacles that blur the distinction between science and ideology and fuels the ire of Muslim scholars like al-Tharvi, Nasr, Bakr and Philips resulting in the

calls for a diffuse “Islamic science”. Monod and Dawkins’ philosophical conclusions can be better understood as one interpretation among a myriad of contenders with no empirical grounding. Midgley (1985:2) argues that scientists too are engaged in the process of weaving symbolic webs of meaning which they later find objectionable. Ironically, Dawkins, in the case above, first gives succour to a pessimistic nihilism but later calls for a sanitary cordon to jettison such symbolic webs from science. Having subverted the prevailing worldview, Monod, for example, substitutes it with the symbolic web spun by the likes of Jean Paul Sartre: man who is abandoned, anguished and in despair, takes responsibility and bravely confronts a meaningless universe. Sartre believed God was non-existent but borrowed from Nietzsche’s famous statement: “God is dead” (*Thus Spake Zarathustra*) to illustrate man’s abandonment by God (Warburton, 2006:225). The metaphorical use of the word abandonment is deliberately chosen to drive home the sense of abandonment and despair now confronting humans. Sartre heaped scorn on those who peddled a secular form of Christianity devoid of a belief in a deity. They should pluck up the courage to acknowledge their metaphysical abandonment and make subjective (not arbitrary) decisions, according to him. The fact that man is ironically “condemned to be free” - because this new-found emancipation brings a sense of responsibility – results in anguish. Finally, the intransigent nature of the world, denying us the desires we crave, induces a sense of despair. Sartre’s critics called his existentialism a “philosophy that could only lead to ‘a quietism of despair’” (Warburton, 2006:224). He was chided for the sense of paralysis his pessimistic philosophy inevitably spawned. Unfortunately, when evolutionary theory is wrapped in the garments of existentialist philosophy, it becomes difficult to answer creationist critics like the aforementioned Kapelrud (2000) who asks, “What is the meaning of life – if one is ultimately just a ‘wandering chemical-bomb?’”

### **3.1.5. Darwin’s own faith.**

The issue of Darwin’s own religious views have often taken centre-stage in the creation-evolution debate. Before grappling briefly with this topic it is vital to keep in mind that Darwin’s religious stance, though of some interest to the overall discussion, cannot really adjudicate either way, much as Francis Crick’s ambitious statement “we can expect to see major efforts to improve the nature of man himself within the next ten thousand years” (Midgley, 1985:65) is immaterial to his co-discovery of the double-helix. Darwin recorded reflections in his notebook aboard *The Beagle* that sounded more like the indulgent adoration of a fervent worshipper: “Twiners entwining twiners – tresses like hair – beautiful Lepidoptera – silence – hosanna” (Dixon, 2008:61). The jungles were the product of the God of nature and one cannot stand and behold them without “feeling that there is

more to man than the mere breath of his body” (*Ibid*, 2008:61). However, Darwin’s faith began to evolve and McGrath (2007:74, 75) highlights two vital aspects that negatively impacted upon his faith in conventional Christianity. The first is the dilemma of pain and suffering in the world, which in the case of Darwin, was amplified at the premature death of his ten year old daughter, Anne. This problem of evil – the classic conundrum of how a benevolent God can allow evil – was epitomized in the atrocious example of the ichneumonid wasp. Darwin wrote to Asa Gray in 1860:

I cannot persuade myself that a beneficent and omnipotent God would have designedly created the Ichneumonidae with the express intention of their feeding within the living bodies of Caterpillars, or that a cat should play with mice (Gould, 1999:189).

In trying to make sense of such morally revolting practices like the “instincts such as the young cuckoo ejecting its foster-brothers, ants making slaves, the larvae of Ichneumonidae feeding within the live bodies of caterpillars” (Darwin, 1998:186), Darwin elected to view these through the lens of evolutionary struggle where the strongest survive and the weakest die, rather than an act of divine endowment which is incommensurate with the notion of a benevolent Creator. The picture was one of “nature red in tooth and claw” as Tennyson famously described it rather than one of “all things bright and beautiful”. The second aspect that undermined Darwin’s belief in orthodox Christianity was what he perceived as the unacceptable teaching of an eternal hell for those who refuse to embrace the Gospel. McGrath (2007:75) subsumes this under the framework of an era of growing criticism levelled at core Christian doctrines. Michael Ruse (1998) describes Darwin initially as a deist whose God was the Unmoved Mover. Ruse maintains that “in Darwin one had a strong commitment to social and intellectual progressivism. This was very much the political philosophy of his (upper middle-class) family’s segment of society” (Ruse, 1998:18). Darwin ultimately designated himself an agnostic – a term coined by his friend Thomas Huxley in 1869 (Dixon, 2008:63). From his correspondence with his wife, Emma, it appears that Darwin was placed on an emotional rack in regards to the issue of faith. Emma had written to him fearing that his lack of faith would separate them in eternity. 40 years later, after his death, Emma found her husband’s words beside her own: “When I am dead, know that many times, I have kissed and cryed over this” (Dixon, 2008:63, 64).

The next section will trace the trajectory of creationism. As some scholars have pointed out, creationism can usefully be explored as a radical reaction to the totalizing claims of positivism and scientific or methodological naturalism. The beleaguered creationists responded by resorting to a narrow scriptural literalism resulting in desultory distinctions between metaphor and literal readings of the book of Genesis all conjured up from within a Manichaeian universe. Paradoxically, “new atheists” (Beattie, 2007) like Sam Harris, Richard Dawkins, Daniel Dennett and Christopher



Hitchens, who privilege evolutionary atheism as an all-encompassing explanatory mechanism, lend a veneer of legitimacy to this creationist literalism, although a minority view within Christianity, and ignore any serious attempt at engaging with the theology of Paul Tillich or Karl Barth, for instance (Haught, 2008:44).

In relation to Islamic creationism, this issue ought to be of some concern for educators in the UK. For one, Islamic creationism enjoys a more robust consensus among the grassroots in comparison to the fragmented landscape among Christians. Secondly, given the overwhelming refutation of evolution among Muslims, there is scope for further research that probes the extent to which the question of origins has been instrumental in the call for separate Muslim schools. As Barnes writes with regards to pupil dissatisfaction with the manner in which their faith is portrayed:

Certainly there is evidence that members of religious minority communities, particularly the Muslim community, are forsaking community schools for faith schools, where there is the opportunity to do so without serious financial penalty, and this is in part because of the perceived secularism of religious education. (Barnes, 2009:22).

### **3.2. Creationism – the legacy of William Paley**

The proliferation of new epistemological models by positivists like August Comte and Karl Pearson heralded a new dawn in the hitherto amicable nexus between classical metaphysics and the natural sciences. The ascendancy of scientific naturalism was at the expense of theology and religious studies which gradually were defined in opposition to the methodology of science which, it was argued, is constrained by the principles of testability, publicity, empiricity and fallibilism (Audi, 2009) (Audi, 2009). It was in this climate that the eighteenth century theologian and naturalist William Paley (1743-1805) introduced his famous “God as Watchmaker” metaphor which compared God the creator to a designer. The metaphor was carefully devised with the intention of appealing to the naturalistic/mechanical worldview prominent in the epoch of Comte (Caruna, 2009:187).

In crossing a heath, suppose I pitched my foot against a stone, and were asked how the stone came to be there; I might possibly answer, that, for anything I knew to the contrary, it had lain there forever: nor would it perhaps be very easy to show the absurdity of this answer. But suppose I found a watch on the ground, and it should be inquired how the watch happened to be in that place; I should hardly think of the answer which I had before given, that for anything I knew the watch had always been there...The watch must have a maker; there must have existed...an artificer...who formed it for the purpose which we find it actually to answer; (Paley, 1818:12-14).

This variant of the teleological argument was prominent among the ancient Greeks, articulated in the writings of Cicero and was more or less unchallenged until the time of Darwin. By analogy

Paley begins with a watch which bears all the hallmarks of design written all over it. From this premise he extrapolates to more intricate biological mechanisms like the human eye which also must have a divine designer, namely God. In the days before the voyage on *The Beagle*, Darwin, in his own words, derived as much pleasure from Paley's work as he did Euclid. However, the discovery of natural selection eventually relegated Paley's argument from design to the dustbin of scientific history alongside other constellations of obsolete ideas like the geocentric theory and the phlogiston theory of burning. Dawkins makes Paley's watchmaker metaphor the subject of his book *The Blind Watchmaker* (1985) in which he pays tribute to Paley rather like one who assumes the role of a magnanimous victor before his vanquished foe. He concludes "If natural selection can be said to play the role of watchmaker in nature, it is the *blind* watchmaker" (Dawkins, *The Blind Watchmaker*, 1985:5).

Nevertheless, the main thrust of Paley's argument from design is still esteemed among creationists and intelligent designers which, for better or worse, is a testament to its abiding influence. One such apologist is Michael Behe who, in his book, *Darwin's Black Box* (1996), introduced the concept of "irreducible complexity". He defines it as,

A single system composed of several well-matched, interacting parts that contribute to the basic function, wherein the removal of any one of the parts causes the system to effectively cease functioning (Behe, 1996:39).

Behe furnishes us with one such example – the humble mousetrap. After describing the various interacting components in this contraption, he goes on to argue that all the parts must be simultaneously present for the task at hand or the trap will simply malfunction. Evolution simply collapses at this point, according to him, because incremental increases or improvements over millennia would be cumbersome and counter-productive. This has spawned the now famous (or infamous) question: What use is half an eye or half a wing? Behe critiques Paley for digressing from this main argument and woefully grappling with the function of each component of the watch. Paley, for instance, opined that the wheels of the watch were made of brass to prevent rust which is erroneous. But on the main thrust of the argument, Behe concludes:

But exactly where, we may ask, was Paley refuted? Who has answered his argument? How was the watch produced without an intelligent designer? It is surprising but true that the main argument of the discredited Paley has actually never been refuted. Neither Darwin nor Dawkins, neither science nor philosophy, has explained how an irreducibly complex system such as a watch might be produced without a designer. (Behe, 1996:213).

In a rather sympathetic tone, Lennox (2007) nuances the caricatured portrayal of Paley as a "figure of fun, a sad and tragic reminder of the absurd and facile attempts that have been made in the past to make belief in God credible by linking it somehow with science" (Lennox, 2007:79). Lennox refers

among others to the theologian, John Henry Newman, who feared that Paley's emphasis on natural theology exalted the laws of nature to such a degree that readers would struggle to envision a God who can suspend these laws which is the essence of revelation. In Newman's view, the prolonged fascination with the laws of nature run the risk of supplanting the personhood of the transcendent God and reduces Him to a mere identification with His created works. "Indeed, a Being of Power, Wisdom and Goodness, and nothing else, is not very different from the God of the Pantheist" (Lennox, 2007:81). This would be a form of idolatry. Lennox replies that Paley never suggested these to be the only attributes of God but that one can make these inferences from nature and concludes, "Thus it is hard to see how Newman's fears are justified – at least in so much as they apply to Paley himself. One might be forgiven for suspecting a certain rivalry of boat-race proportions between Newman (Oxford, Roman Catholic) versus Paley (Cambridge, Protestant)" (Lennox, 2007:81,82).

Others, however, like McGrath (2007) are less impressed with Paley. In his view, Paley's argument was already successfully undermined by theologians like Newman several years before Darwin and can only be perceived as "a wrong turn that the English national church took" (McGrath, 2007:69). Furthermore, Dawkins succeeds in demolishing an already discredited example of a failed theological adventure which he presents as a universal theology. Whatever view one takes in regards to Paley, a perusal of modern-day creationist literature invariably evinces a resuscitation of the main idea underpinning his "God as watchmaker" metaphor. Paley's imprimatur is evident in the tenor of the argument below forwarded by the Muslim creationist, Harun Yahya (1999):

If the same scientist [an evolutionist] were to find three bricks resting on top of one another while walking along a flat road, he would never suppose that these bricks had come together by chance and then climbed up on top of each other, again by chance. Indeed, anyone who did make such an assertion would be considered insane (Yahya, 1999).

In what follows, I will trace the contours of the modern-day creationist movement in the USA as this brand of creationism has undoubtedly shaped and moulded the Islamic creationism most prevalent in Muslim nations like Turkey.

### **3.2.1. Henry Morris and the rise of modern creationism**

The late hydraulic engineer Henry M. Morris is widely considered to be the father of the movement that goes under the name of "creation science" (Scott and Branch, 2006:5). The significant impact Morris' creationism has had even among British creationists can be gauged by a statement made by Stephen Layfield, head of science at Emmanuel College in a lecture entitled, *The Teaching of*

*Science. A Biblical Perspective* (2001): “It would seem particularly prudent for all who deliver this aspect of the curriculum [earth science] to familiarize themselves with the Flood geology papers of Whitcomb and Morris” (Dawkins, 2006:373-375). In two publications, *That You Might Believe* (1946) and the subsequent, *The Bible and Modern Science*, Morris proclaimed a young-earth no more than six to ten thousand years old in conjunction with a literal historical Flood (Genesis 6) to account for the physiographic formations of the earth’s surface ranging from sedimentation patterns, the fossil record and the Grand Canyon.

Characteristic of his later books, *The Genesis Flood* (1961) and *The Genesis Record* (1976), is an ad hoc cocktail of literalistic readings of the book of Genesis interlaced with a “scientific” approach tailor-made to buttress “creation science”. Building on the Flood geology of the early 19<sup>th</sup> century Seventh-day Adventist geologist, George McCready Price, Morris elevated Noah’s Flood as a *sine qua non* event indispensable to understanding our present world. Such a young earth automatically retires the theory of evolution, according to Morris. Morris founded the Institute for Creation Research (ICR) in 1972 to spearhead the attack against evolution. The last chapter (2.4.2) noted the successful involvement of ICR with the Turkish Department of Education in a joint partnership that continues to this day (Yahya, 1999). Creationism and evolution’s approach to the issue of origins can usefully be understood using the symbolism below:

If evolution’s dominant metaphor is a tree of life branching through time, the image brought to mind with special creationism is of a lawn, with each blade of grass being separately created kind. In special creationism, living things do not share common ancestors. Similarly, creation science proponents profess that the universe came into being in its present form, and that living things are separately created kinds exhibiting limited genetic variability. (Scott and Branch, 2006:6, 7).

Clearly, Morris’ advocacy of a tight chronology in regards to Genesis is problematic, to say the least. He may claim some expertise in commenting on the Noahic deluge as a hydrologist but he has had no formal theological training (Morris, 1976: vi). This thread will be further explored in the section on scriptural literalism later. The first and most glaring dilemma facing creationism is the purported young age of the earth. Radioactive isotopes decay at their own characteristic rate which can be known precisely by using a radioactive clock like potassium argon. Newly solidified crystals in igneous rocks would have a ratio of one hundred percent in favour of potassium-40 with a corresponding zero percent to potassium argon. With an exponential rate of decay, potassium-40 goes one lower in the periodic table becoming potassium argon after a half-life of 1.26 billion years (Dawkins, 2009:96). At this juncture, geologists would say the ratio is 50-50. As another 1.26 billion years elapses, the remaining 50% of potassium-40 decays to argon-40. Thus, “Geologists, by measuring the ratio between potassium-40 and argon-40 in a piece of igneous rock that they pick up

today, can tell how long ago the rock first crystallized out of its molten state” (Dawkins, 2009:97). A vast array of radioactive clocks all converge at roughly the same age. Uranium-238 decays to lead-208 with a half-life of 4.5 billion years, for example. The very existence of these rocks precludes a young earth 6-10,000 years old.

Morris brushes off the evidence suggested by radiometric dating on the grounds that the underlying assumption of constant decay rates is fallacious (Morris, 1985:139). The influence of Morris on creationists in our time is telling. Martin Down (2007), a creationist Church of England vicar, also heaps scepticism on the basic assumptions of uniformitarianism behind the science of radiometric dating recycling Morris’ argument that there is too little helium in the atmosphere to support a 4.5 billion year time-scale (Morris, 1985:150-151). Down (2007) contends that the helium released into the atmosphere when uranium decays to lead over the purported billions of years, for instance, should exist in copious amounts as helium is an inert gas resisting any combination with chemical elements.

The problem is that most of the helium also produced by this radioactive decay is still there in the same rocks where it was formed. If the rocks are as old as the scientists say, this helium should have been diffused out of the rocks long ago, and there should be correspondingly more helium in the atmosphere (Down, 2007:137).

Lie-Svendsen and Rees (1996) respond that helium, being a very light atom found in the upper reaches of the terrestrial atmosphere, often reaches escape velocity simply through the agency of temperature. Thermal escape coupled with the fact that helium gets ionized and follows the earth’s magnetic field lines are mechanisms which explain the scarcity of helium in the atmosphere. The quandary which Morris’ version of creationism must wrestle with is amply demonstrated in his speculation, “The universe was created mature, with apparent age. Light from the sun and stars fell on the earth from its beginning” (Morris, 1985:209-210). This, of course, is not a convincing argument to explain how the phenomenon of night and day could be accounted for before the creation of the stars, sun and moon which only shone on the fourth day. (Genesis 1:14-19, Bible). As Isaac writes:

The appearance of age asks us to accept that light from supernovae came from stars that never actually existed, and that the evidence for low oxygen was also fake. This makes God into a deceiver, since he created an appearance different from reality. Romans 1:20 says that God is to be “understood from what has been made”. The apparent age claim says we cannot trust what has been made. (Isaac, 2007:218)

Creationists are undaunted, however, and marshal a host of other arguments in a never-ending feud. Dr. Stuart Burgess, Head of Department of Mechanical Engineering at Bristol University, for

example, marshals an argument from the paucity of creativity and intelligence in human activity before the biblical time frame (10,000 years) as supporting a recent creation:

To illustrate the enormity of the problem for evolution, just consider what people have been around in the last 1,000 years and what man has achieved in this period. There have been many brilliant minds like Leonardo da Vinci, Newton, Kelvin and Faraday, and such people have made countless inventions. If man had been around for the last 100,000 years, there would have been people with the ability of Newton living in virtually every generation (Burgess, 2004:125).

Any serious attempt to get to grips with creation science will warrant some familiarization with the idiosyncratic literalism invested into the global flood catastrophe that transpired in the days of Noah as found in the book of Genesis 7. A cursory understanding is attempted in the next section.

### **3.2.2. Catastrophism and the fossil record.**

For yet seven days, and I will cause it to rain upon the earth forty days and forty nights; and every living substance that I have made will I destroy from off the face of the earth (Genesis 7:4, King James Version).

Morris, aware that current atmospheric conditions would not support a deluge that covered the highest mountain in the span of forty days and forty nights, postulates that “a vast thermal blanket of invisible water vapour” orchestrated a greenhouse effect on the antediluvian world (Morris, 1976:191). The razor-sharp literalism at play is germane to an understanding of the mindset of modern creationism. Morris justifies the postulation of such a water canopy on a rigidly literal reading of Genesis 1:6 “And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters” (Bible, KJV). Creationists like Ken Ham, Duane Gish, Andrew Snelling, Carl Wieland and Jonathan Sarfati subscribe to this water canopy theory and employ it to explain much about current physiographic phenomena. In their view, the canopy, among others, rationally explains the long ages of the biblical patriarchs before the flood. Adam could have lived for 930 years (Methuselah holds the record with 969 years) because the canopy furnished a greenhouse-effect which reduced the harmful effects of the sun’s rays, for example. However, the irredeemably sinful and decadent state of the antediluvian world left God with no other recourse than to cause this water canopy to pour down torrentially, along with water from subterranean fissures without respite for forty days and nights inundating the earth violently and devastating every vestige of terra firma. The collapse of the water canopy coupled with the “cleaving asunder” of underground water conduits, resulted in shorter life spans, permanent changes in the earth’s atmosphere and fossils preserved through rapid burial and lithification within no more than 150 days (Morris, 1976:191-205).

Henry Morris perceives the Noahic Deluge as pivotal; an unshakable tenet in the fight against evolution. He argues that catastrophism on account of a global biblical flood better explains the current physiographic features of the earth rather than the slow and grinding process of uniformitarianism at the core of evolution. A favourite counter-argument to the uniformitarian theory among creationists is that of Mount St. Helens (Washington State) which erupted in 1980. Rock layers were laid down rapidly with a later mudflow producing a 100ft (30m) deep miniature version of the Grand Canyon. As Bowden avers, “This shows that numerous layers are no guide to the time taken to produce them” (Bowden, 1998:393,394). Sarfati adds, “The Mount St. Helens eruption in Washington State produced 25 feet (7.6 meters) of finely layered sediment in a *single afternoon!*” (Sarfati, 2005:105).

The issue of fossils has always been a bone of contention in the creation evolution debate. Evolutionists are adamant that the “missing link” is no longer missing. Dawkins (2009:197) highlights the pre-human fossil remains of “Turkana Boy” discovered by Kamoya Kimeu working among Richard Leakey’s team of palaeontologists as a case in point. Turkana Boy (*Homo ergaster*) lived ca. 1.6 million years ago and is considered an intermediary between *Homo sapiens* living today and *Homo habilis* two million years ago and, in turn, links up with *Australopithecus* three million years ago. Turkana Boy’s brain size (projected at 900 cc as an adult) is smaller than modern humans (1,300 or 1,400 cc) but larger than *Homo habilis* (around 600 cc) which fits well with the hypothesis of a gradually increasing brain size in conjunction with bipedal mobility on hind legs in the story of human evolution in the last 3 million years (Dawkins, 2009:197). Yahya objects to what he considers superfluous taxons as *Homo erectus* and *Homo ergaster* on the grounds that “differences in cranial capacity do not necessarily denote differences in intelligence or abilities. Intelligence depends on the internal organization of the brain, rather than on its volume” (Yahya, 1999:102). Yahya (1999) quotes the American palaeontologist, Alan Walker, who apparently laughed when he saw the skull of Turkana Boy as it looked very similar to a Neanderthal (*Ibid*). Yahya is convinced that Neanderthals are to be subsumed under modern *Homo sapiens* which would categorize Turkana Boy among modern humans too.

Stuart Burgess (2004:24), in a similar vein, draws on his expertise as a mechanical engineer to refute the evolutionary claim that apes gradually evolved from quadrupeds to walk uprightly and with a bipedal motion as modern humans do. Among the unique features indispensable to walking uprightly, Burgess (2004:24-31) lists arched feet, strong big toes, long legs, upright knee joints, angled femur bones, upright hip joints, a straight back, upright skull, flat face and a fine balance. The influence of Michael Behe (1996) is identifiable in his line of argument:

A very important feature of the human foot is that it is an irreducible structure. This means that there are several parts in the foot that must be in place and correctly designed before the foot can function properly...Only an intelligent designer has the ability to think ahead and plan all the features needed to make an arch like the foot. (Burgess, 2004:27).

As alluded to often in this study, modern Islamic creationism has been inspired by the peculiar version of creationism emanating from the USA. Curiously, however, they part ways in regards to the centrality of the Noahic Flood and the postulation of a young earth no more than 10,000 years old. This warrants a brief study.

### **3.2.3. A comparison with Islamic creationism**

Islamic creationism appears unperturbed by evolutionary suggestions of incredibly long ages for the earth and the universe. Moreover, an examination of Islamic creationist material fails to turn up the usual critique and denunciation of uniformitarian teaching that suggests the laying down of rock layers virtually undisturbed over millennia. Both issues can be traced to Qur'anic texts supporting such readings. Beginning with the age of the universe, there appears to be a consensus among Muslim scholars that the Qur'an affirms the occurrence of a "Big Bang". This event is believed to have transpired ca. 13.7 billion years ago by astrophysicists (Davies, 2006:23). Interestingly, Muslims accept this account of naturalistic events, not due to the discoveries of modern science such as the expanding universe posited by Edward Hubble and Vesto Slipher, or the thermal radiation (cosmic microwave radiation) picked up by Arno Penzias and Robert Wilson in 1967, but a penchant for a literalistic reading of the Qur'an. In this they share a similar mindset with Christian creationists. The foci in both cases appears to be a religious coloration which moves in the direction of finding evidence that bolsters what the scriptural texts state, as they understand it. Dr. Zakir Naik, a prominent Muslim scholar points to a Sura that confirms the Big Bang in his mind:

Do not the Unbelievers see that the heavens and the earth were joined together (as one unit of creation), before We clove them asunder? (Al-Qur'an 21:30).

Elated, Zakir Naik is in no doubt as to the miraculous nature of the Qur'an in identifying the origin of the universe in a manner commensurate with the findings of modern science. For most Muslims, the doctrine of the inerrancy of the Qur'an is not a subject for negotiation. "The striking congruence between the Qur'anic verse and the 'Big Bang' is inescapable! How could a book, which first appeared in the deserts of Arabia 1400 years ago, contain this profound scientific truth?" (Naik, 2007:10,11). Yaran (2007:74), a theistic Muslim evolutionist, senses an inconsistency in the above



stance. He interrogates the casual acceptance of the Big Bang which proclaims a gradual evolution in the inorganic order but a concomitant rejection of evolution in the organic order among Muslims.

Muslims again diverge with reference to the universal implications of the Noahic Deluge in comparison to Christian creationists of the Morris school. This event is conspicuous by its absence in Islamic creationist polemic. Prima facie this absence is a curiosity given that the Qur'an refers to Noah and the associated flood sent as a punitive measure by God. The clue lies in the *extent* and *degree* of the flood according to the Qur'an. One challenge in deciphering the account in the Qur'an is the rather ad hoc references to Noah and the flood not susceptible to a chronology. Nevertheless, Bucaille (1995:216) zeroes in on the contrast: "Whereas the Bible describes a universal Flood intended to punish ungodly humanity as a whole, the Qur'an, in contrast, mentions several punishments inflicted on certain specifically defined communities". The communities guilty of contravening the commandments of God were singled out for a flood rather than the entire globe:

We gave Moses the Scripture and appointed his brother Aaron with him as vizier. We said: Go to the people who have denied Our signs. We destroyed them completely. When the people of Noah denied the Messengers, We drowned them and We made them a sign for mankind. We destroyed the tribes of Ad and Tamud, the companions of Rass and many generations between them. We warned each of them by examples and We annihilated them completely (Qur'an 25:35-39).

Another fundamental difference which has a bearing on the issue of the age of the earth is that the Qur'an, unlike the Bible, does not attempt to provide a time-frame which places the cataclysm in a historical context (Bucaille, 1995:217). Thus the scope and time factor of the Noahic Flood, as understood through the sacerdotal descriptions, are two vital explanations accounting for the peculiar silence from the perspective of Islamic creationism. This divergence raises several interesting observations. Firstly, it lends credence to the critique from evolutionists who often ask, "Which version of creationism ought to be taught in the classroom in the event that 'equal time' is granted?" At the moment, there appears to be a truce of sorts drawn up between Christian and Muslim creationists as the battle rages against evolution but, these discrepancies triggered by literalist readings can be expected to throw up severe challenges in the future. This is especially relevant given the current furore surrounding creationism in the UK in the last few years. Professor Michael Reiss forfeited his prestigious position in the Royal Society when he suggested that creationism be treated as a legitimate worldview. Reiss' statement was measured and took cognizance of the reality on the ground. He was in no way advocating creationism, but the outcome is testament to the zealous demarcation of lines on each side. Reiss estimated that roughly 10% of school children in Britain come from homes with creationist beliefs. According to Aleandra Frean, education editor at *The Times*:

Nearly a third of teachers believe that the theories of creationism and intelligent design should be given the same status as evolution in the classroom, according to a survey. However, 50 per cent disagreed...The poll, commissioned by the broadcaster Teacher's TV, found out that 50 per cent of teachers agreed with Professor Reiss' view that excluding alternative explanations to evolution is counter-productive, and could alienate pupils from science (Frean, 2008).

Again, although a narrow reductionist definition of what passes for science is critiqued in this chapter, the diverging interpretations of two major world religions, each aspiring to gain "equal time" in the science classroom, necessitates some kind of demarcation of the boundaries of science. Finally, the truce is actually quite deceptive in that it conceals a theological minefield. If Muslims were to sanction Henry Morris' peculiar version of creationism, this would be tantamount to giving tacit approval to the accuracy and inerrancy of biblical scholarship as proclaimed by American creationists. Anyone familiar with the nature of Muslim-Christian apologetic debates, however, is painfully aware of the spirited attempts of each group to undermine the scriptures of the other through textual criticism. The writings of the late South African Muslim scholar, Ahmed Deedat, illustrate this point.

It is beyond the scope of this study to explore other counter-arguments against evolution held in common by Christian and Muslim creationists. However, the all-pervasive impact of Morris' idiosyncratic version of creationism (except the Flood and the age of the universe) is evident in Islamic creationist literature which inevitably features arguments from the second law of thermodynamics (entropy); evolutionary forgeries of fossils such as Piltdown man and Nebraska man; attempts to discredit the classic account of the peppered moths; attacks on the failed attempt to "create" life in the laboratory undertaken by Miller and Urey and a host of arguments marshalled from the writings of Ken Ham, Duane Gish, Michael Denton, Dembski and Behe, to name a few.

The last 85 years have witnessed a colossal tug of war between creationists and evolutionists. Nowhere has this been more sharply contested than in the courtrooms in the USA with accompanying media interest galvanizing both sides to dig in their positions and fight uncompromisingly even after the cases have been settled. Cable news channels like Fox News, known for sympathizing with more right wing (Republican) causes have subsumed the creation evolution debate under a broader societal feud often referred to as a "cultural war". The segment next looks briefly at some of these litigations and their impact on the debate.

### 3.2.4. From Scopes to Kitzmiller vs. Dover.

Scott and Branch (2006:1) delineate three trends that converged to generate the antievolution movement in the USA: the proliferation of secondary education, the rise of protestant fundamentalism and the conflation of evolution with social Darwinism e.g. eugenics. Indeed, pioneering American educators like John Dewey did little to conceal their admiration for Darwin's theory of evolution which informed much of his thoughts on education. Alexis de Tocqueville observed in the 1800s that Americans have a penchant for bringing disputed issues before the courts. Indeed, if the frequency of litigations is anything to go by, the creation evolution debate clearly must rank among the most divisive issues that have exposed deep fissures in American society. Fundamentalist Christians found a stalwart ally in the progressive politician, three-time failed presidential candidate and charismatic figure of William Jennings Bryan. Bryan called for state legislatures to proscribe the teaching of evolution on account of which the Tennessee legislature passed the Butler Act - a precursor to the iconic Scopes Trial (Scott and Branch, 2006:3). The Act indubitably forbade any teacher to "teach any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals" (Dixon, 2008:83). The American Civil Liberties Union (ACLU), undaunted, found a volunteer in a science school teacher by the name of John Scopes to take a stand for what they perceived as intellectual freedom.

Predictably, the court case did descend into a carnival that was billed as a clash between science and religion in the populist press. The memorable events have been made the subject of, among others, a film and a Pulitzer Prize winning book. The denouement of the trial, dubbed "The Monkey Trial" (1925) was the conviction of Scopes for defying the law. The defence, with Clarence Darrow and the ACLU did not doubt this outcome but intended all along to contest the constitutionality of the antievolution ruling in the higher courts. Bryan's ire was exercised by a diagram in Hunter's *Civic Biology* textbook from which Scopes taught biology in which "humanity was shut up in the little circle entitled 'Mammals', with thirty-four hundred and ninety-nine other species" (Dixon, 2008:86). Bryan thundered:

Does it not seem a little unfair not to distinguish between man and lower forms of life? What shall we say of the intelligence, not to say religion, of those who are so particular to distinguish between fishes and reptiles and birds, but put a man with an immortal soul in the same circle with the wolf, the hyena and the skunk? What must be the impression made upon children by such a degradation of man? (Dixon, 2008:86).

Germane to this study is the admission on the part of Bryan (thanks to Darrow's persistent questioning) that the Genesis days of creation may have spanned more than a literal 24-hour period (Gould, 1999:137). The status quo was to remain unchallenged until 1968 when Susan Epperson, a teacher from Arkansas challenged a similar law in the Supreme Court on the basis of the First Amendment. This trial finally overturned the Scopes ruling. Gould (1999:140) describes a two-pronged response in the retaliation strategy adopted by creationists: they jettisoned explicitly theological references and, rather than fight for the expunging of evolution, demanded equal time for creation science in any classroom that teaches evolution. This strategy proved successful in that at least two states - Arkansas and Louisiana - acquiesced and passed "equal time" or 'balanced treatment' laws.

Arkansas' "equal time" was again challenged in court. *McLean v. Arkansas* (1982) was particularly noted for the carefully worded manner in which the court adjudicated on what constitutes for a legitimate scientific theory. The judge ruled that creationism was parasitic upon a "contrived dualism" in which the strategy is to offer a binary choice between evolution or creationism. Creationists hammered away at evolution seeking to undermine and discredit it only to hold up creationism as the only other alternative without making a convincing case for creationism, according to the judge. In addition, it represented the views of a particular religious sect. Such was the force of Judge Overton's pronouncement that it was reproduced verbatim in the journal *Science*. In short, the judge ruled that a scientific theory must be: guided by natural law; explained by natural law; testable against the empirical world; tentative and falsifiable (Fowler and Kuebler, 2007:337). On these counts, creation science was deemed unscientific. Although this thread will be elaborated upon later, suffice it to say at this juncture that even prominent evolutionists like Michael Ruse confess that Neo-Darwinians espouse an essentially religious outlook. Ruse's candid admission is worth quoting at length:

Evolution is promoted by its practitioners as more than mere science. Evolution is promulgated as an ideology, a secular religion – a full-fledged alternative to Christianity, with meaning and morality. I am an ardent evolutionist and an ex-Christian, but I must admit that in this one complaint – and Duane Gish (a prominent Creationist) is but one of many who make it – the literalists are absolutely right. Evolution is a religion. This was true of evolution in the beginning, and it is true of evolution still today...Evolution therefore came into being as a kind of secular ideology, an explicit substitute for Christianity (Fowler and Kuebler, 2007:337).

The weight of these words is made all the poignant when one considers that Michael Ruse was an expert witness who argued against creation science in *McLean v. Arkansas*. The state of Arkansas decided not to appeal against the ruling, but Louisiana appealed to the U.S Supreme Court in *Edwards v. Aguillard* (1987). Again, the creationist appeal was struck down when tested against the

three requirements found in the first part of the First Amendment called the Establishment Clause or simply *Lemon* test (from a Supreme Court case called *Lemon v. Kurtzman*): it must not promote any particular religion or religious view; it must not have the primary effect of either advancing or inhibiting religion and it must not result in excessive entanglement of government and religion (Fowler & Kuebler, 2007:338).

In the last court case, *Kitzmiller v. Dover* (2005), the Dover (Pennsylvania) Area School Board adopted an Intelligent Design policy (ID). Their resolution stated “Students will be made aware of gaps/problems in Darwin’s theory and of other theories of evolution, including, but not limited to, intelligent design” (Scott and Branch, 2006:94). The board issued a disclaimer with reference to evolution which the teachers were expected to read out in the classroom.

Because Darwin’s Theory is a theory, it continues to be tested as new evidence is discovered. The theory is not a fact. Gaps in the Theory exist for which there is no evidence. A theory is defined as a well-tested explanation that unifies a broad range of observations...Intelligent Design is an explanation of the origin of life that differs from Darwin’s view. The reference book, *Of Pandas and People*, is available for students who might be interested in gaining an understanding of what Intelligent Design actually involves (Scott and Branch, 2006: 94, 95).

Concerned parents brought the case to court. Judge John E. Jones III struck down this ID policy employing the aforementioned *Lemon* test. He further analyzed the historical development of the ID movement and dismissed their tenets as no different from well-known creationist spiel with minor modifications. The judge also clarified that the injunction to read out the disclaimer in class was itself a form of teaching although the school board claimed otherwise.

Needless to say, the above summary, highlighting the twists and turns in the 85 years since Scopes demonstrates the degree to which the creation evolution debate has become a lightning rod political matter that shows no signs of abating. In the aftermath of *Kitzmiller v. Dover* (2005), voters in the town of Dover elected to replace the pro-ID school board with a pro-evolution one. This prompted the TV preacher Pat Robertson to warn on his *700 Club* show: “I’d like to say to the good citizens of Dover, if there is a disaster in your area, don’t turn to God. You just rejected him from your city. And don’t wonder why he hasn’t helped you when problems begin, if they begin” (Flynn, 2006:68). Conversely, however, the next section will seek to show that Pat Robertson’s crude brimstone and hellfire fundamentalism shares certain parallels with the uncompromising fundamentalism pedalled by scientific naturalism. Coyne (2009), for example, overstates the nature of the debate depicting it in Manichaeian terms in the aftermath of *Kitzmiller v. Dover* (2005):

And while the Dover Trial is an American story, creationism isn’t a uniquely American problem. Creationists – who aren’t necessarily Christians – are establishing footholds in other parts of the world, especially the United Kingdom, Australia, and Turkey. The battle

for evolution seems never-ending. And the battle is part of a wider war, a war between rationality and superstition. What is at stake is nothing less than science itself and all the benefits it offers to society. (Coyne, 2009: xiii).

An underpinning approach employed to arbitrate in *McLean v. Arkansas* (1982) is the method of scientific materialism. Some (see Harrison, 2007:160; Armstrong, 2009:291, for example) have argued that precisely scientific naturalism, in laying claim to be the sole philosophical arbitrator, has inadvertently given succour to radical scriptural literalism which lies at the heart of creationism. In what follows, I will put the spotlight on scientific naturalism and contrast it with scriptural literalism.

### **3.3. Scientific naturalism and scriptural literalism.**

Robert Audi (1999) argues for a demarcation between church and state in a manner reminiscent of Gould's non-overlapping magisteria (1999). He does this by highlighting the scientist's choice of methodology, methodological naturalism (MN), which he claims is constrained by the principles of testability, publicity, empiricity and fallibilism (Audi, 2009:24-27). Following this premise, not only does MN squeeze out the transcendent, but it further tightens the criteria for what may fall within the provenance of science – fields like ethics and theology would unequivocally run afoul of the parameters set by the principles of MN, as outlined by Audi. According to him, a privileging of the philosophical naturalistic worldview in science is necessarily incompatible with teaching creation science or ID within the public educational setting.

Audi (1999:36) draws on the principle of secular rationale which posits that any constraint on human conduct must be justified under the framework of liberty, equality and neutrality which is commensurate with the aspirations of a liberal democracy. In his view, the two principles of methodological naturalism and that of the secular rationale adjudicate in favour of teaching evolutionary science alone in the classroom. Recognizing the rather draconian implications of what borders on the imposition of a phenomenological tyranny upon students of a religious persuasion, Audi (1999) grapples with objections raised by Habermas. Habermas counters that individuals with religious predilections would be hard-pressed to suspend their worldview and think in terms of a cognitive other by undertaking “an artificial division within their own minds without jeopardizing their existence as religious persons” (Audi, 2009:37). Devout adherents of various religious shades often perceive society within the cocoon of their totalizing worldview and not as compartmentalized entities. This second counter-argument aligns well with the Islamic tenet of *tawhid* discussed earlier. Thirdly, Habermas further points to a discrepancy in the role of state as the guarantor of

basic rights and as expecting “of all citizens that they also justify their political convictions independently of their religious convictions” (Audi, 2009:38).

Audi rebuts Habermas’ arguments by appealing to the Golden Rule, among others. How would non-religious people feel if they are compelled to kneel and worship some god? Finally, Audi (1999) offers advice to science teachers in regards to the evolution-creation debate. Although he reluctantly encourages teachers to deal in a balanced way with questions pertaining to creationism and ID, it becomes apparent that this is untenable and best left unsaid, in his view. Methodological naturalism, he argues, is neutral in relation to theism. Religion is vital in history and cultural studies, for instance, but the science classroom is not the appropriate forum. Drawing on the neutrality principle, he cautions against any antagonism towards religion.

### **3.3.1. Privileging a discourse of scientific naturalism.**

The question of methodological naturalism being neutral is a moot point. Alexander (2008), a theistic scientist, evinces a more cautious and balanced approach to the issue of scientific naturalism. Firstly, he defends the practice of not invoking God in daily scientific discourse citing the famous conundrum of the “God of the Gaps” or what he calls a “Newtonian risk” (Alexander, 2008:185). Simply stated, it would be intellectual laziness to invoke God just because science has not yet demystified a phenomenon. He takes the view that since God is involved in all of creation to single out scientific discourse for special analysis of the divine, would be myopic. This said, Alexander (2008:186) objects to the implications of the nomenclature suggested by methodological naturalism and advocates expunging it. In a vein reminiscent of Habermas’ contention, “the unstated implication is that the Christian will somehow leave their faith behind at the laboratory door, whereas precisely the opposite is the case”. Alexander recommends using “scientific explanations” believing it would safeguard neutrality in regards to the worldview of the scientist involved (*Ibid*). However, the belief that some novel approach can circumvent or render human predilections and prejudices obsolete is a chimera. It is this observation which exercised Barnes (2007) in his rebuttal of O’Grady who, in his view, uncritically eulogizes Ninian Smart’s phenomenological contribution to religious education.

But we would do well not to exaggerate Smart’s contribution to the development of a variable reflexive hermeneutical model for religious education, for immediately after alerting us to the danger of imposing our own preconceived views on other religions, O’Grady quotes Smart to the effect that objectivity in the study of religion is to be achieved by the practice of Buddhist mindfulness! (Barnes, 2007:164)

This study by no means advocates the teaching of creationism as science. There is a consensus among educators that creationism is a parochial view of the question of origins embellished with a scientific facade and adhered to by a narrow Christian minority. Nevertheless, and on a broader level, the high-decibel nature of the debate has surprised some by concomitantly revealing the dogmatic tenacity with which some scientists are committed to scientific naturalism as the only permitted worldview. Haught (2007: xiii) lists some of the main tenets of scientific naturalism:

1. Apart from nature, which includes human beings and our cultural creations, there is nothing. There is no God, no soul, and no life beyond death.
2. Nature is self-originating, not the creation of God.
3. The universe has no overall point or purpose, although individual human lives can be lived purposefully.
4. Since God does not exist, all explanations and all causes are purely natural and can be understood only by science.
5. All the various features of living beings, including human intelligence and behaviour, can be explained ultimately in purely natural terms, and today this usually means in evolutionary, specifically Darwinian, terms. (Haught, 2007: xiii)

Haught (*Ibid*) levels the charge of incoherence and self-subversion against scientific naturalism. Lennox (2007:371), too, objects to the narrow ramifications drawn up by the scientists of this school of thought arguing that not only is defining science quite elusive but that traditional definitions based on a naturalistic reductionism would rule out contemporary cosmology as science because the Big Bang, for example, is not repeatable but based on inference. Lennox laments the fallout from *Kitzmiller vs. Dover* (2005) on account of the unassailable naturalistic premise adopted by Judge Jones. It is vital to keep in mind that the judges in *McLean vs. Arkansas* (1982) and *Kitzmiller vs. Dover* (2005) privileged scientific naturalism giving it pride of place in their final verdicts against creationism and ID. In the latter, Judge Jones stated “Methodological naturalism is a ‘ground rule’ of science today which requires scientists to seek explanations in the world around us based on what we can see and observe, test replicate, and verify” (Lennox, 2007:33). In adopting this stance, the judges may have succeeded in striking down creationist ambitions but have shifted the debate and opened up a Pandora’s Box. By deliberately favouring one philosophical stance (scientific materialism) over a plethora of other philosophical stances, the rulings have exercised a number of scholars to interrogate the relationship between science and religion afresh.

### **3.3.2. The unacknowledged faith of scientific naturalism**

Haught (2007) interrogates the tacit assumption behind scientific naturalism which equates science with reason, verification and objective truth and religious faith with blind belief. Contra Sam Harris, he writes:



Harris, for example, proposes that the removal of all faith is essential if reason is to reign supreme. But he cannot eliminate all traces of faith even from his own mind. As he undertakes his passionate quest to divest the world of faith, he first has to *believe* that the real world is rational, that truth is something to be valued and respected, and that his own mind is of such integrity that it can grasp meaning and make valid claims to truth. (Haught, 2007:48).

In a further interrogation of the unquestioned status accorded scientific naturalism's trust in cognitional confidence, Haught (2007:49) asks, "Since our minds are said to have evolved gradually from a mindless state of nature, why should we trust these same minds to put us in touch with reality?" Obviously, critics would retort that the belief that spurs scientific hypothesis remains just that until verified using, among others, a Popperian falsification process whereas religious belief is not susceptible to verification given its obscurantism. Be that as it may, the bone of contention, in this context, does not revolve around the nature of the belief systems, but rather the fact that scientific naturalists fail to acknowledge that *belief* is an integral component in their quest for truth. Moreover, this belief is often dogmatically clung to. The immunologist George Klein states, "My attitude is not based on science, but rather on faith...The absence of a Creator, the non-existence of God is my childhood faith, my adult belief, unshakable and holy" (Lennox, 2007:34). The Harvard geneticist, Richard Lewontin also makes it unequivocally clear that his materialist convictions are a priori: "Moreover that materialism is absolute, for we cannot allow a Divine foot in the door" (Lennox, 2007:35).

Another academic who weighed in on *Kitzmiller v. Dover* is Kevin Lambert (2006). He rather unceremoniously employs phrases like "Fuller's folly" in characterizing the role played by Steve Fuller of Warwick University who was called in as an expert witness. Fuller incurred this slur due to his stance that Intelligent Design is scientific: "The ID community represents an older scientific tradition – one which Fuller is more sympathetic and for which he regularly cites Isaac Newton and Gregor Mendel as important exemplars" (Lambert, 2006:839). Lambert (2006) portrays Fuller as an intellectual lobbyist who perceives his role as one promoting affirmative action in seeking to give a voice to excluded epistemologies like ID in the face of the dominant hegemonic Darwinian paradigm. Furthermore, Lambert (2006:837) takes ID gurus like Michael Denton and Philip Denton to task for claiming that evolution is a paradigm in crisis and must now abdicate to a more robust paradigm following Thomas Kuhn. Philip Johnson, for instance, alleges that even competent scientists like Dawkins and Provine are so blinded by the current dictates of the evolutionary paradigm that they are incapacitated from acknowledging that there is no conflict between science and religion but one between naturalism and religion. Unfortunately, Lambert (2006) fails to engage with the underpinning worldviews raised by *Kitzmiller v. Dover* but elects to trump the discussion by reminding readers that the normative textbooks in the classrooms today, representing secure

knowledge, are evolution-based. He concedes that the technical and difficult questions raised by ID proponents like Behe and Dembski ought to be grappled with but belong in research and not the classroom.

While some scientists exploited scientific naturalism as a mechanism in excluding religion from the bastions of learning, some fundamentalist Christians fearfully took refuge in scriptural literalism as a talisman for warding off the zeitgeist of modernity. Some familiarity with the rise of fundamentalism is essential to the study of the mindset that underpins the modern creationist movement.

### **3.3.3. The rise of fundamentalism.**

In her book, *The Case for God* (2009), Karen Armstrong argues that the Church, prior to the modern age, generally acknowledged the finitude of language that strove woefully to grasp with the ineffability of the transcendent God. The age was characterised by a spirit of openness and apophatic delight in a lack of certitude illustrated by the accommodation of Montaigne's scepticism and Shakespeare's psychological agnosticism (Armstrong, 2009:183). The Reformation and its emphasis on *sola scriptura*, coupled with the invention of Guttenberg's printing press, ushered in an era where religious individualism trumped communal faith. "Slowly, in tune with the new commercial and scientific spirit, a distinctively 'modern' notion of religious truth as logical, unmediated and objective was emerging in the Western Christian world" (Armstrong, 2009:170). Paradoxically, this freedom of religious toleration did not extend to those who dared challenge the teachings of Luther, Calvin or Zwingli. Calvin endorsed the execution of Michael Servetus for the heresy of denying the Trinity. Though Armstrong's (2009:183) depiction of the Catholic age as one of "openness" characterized by a "spirituality of silence" is open to debate, few would deny that factors such as the Reformation's focus on the scriptures alone and the priesthood of all believers was instrumental in spawning a plethora of charismatic leaders each claiming to have "re-discovered" a hitherto hidden mystery and denouncing other churches as misguided.

The above point is relevant to this study. The overwhelming majority of creationists among Christians are Protestants. In fact, creation science appears to be a non-issue among Catholics as illustrated by the former Pope's endorsement of evolution. However, this does not imply that the early Protestant reformers were locked in a battle against the scientific discoveries of the age. Calvin, for instance, held fast to Augustine's principle of accommodation: "God, as it were, adapted revelation to the cultural norms of the people who had first received it" (Armstrong, 2009:123). If

the Reformation's emphasis on scripture was not directly responsible for the hardening of attitudes towards modernity and science, what was? According to Olson (1999:540), fundamentalism was a response to liberal theology which was moulded in the crucible of the Enlightenment. It was the anthropocentricity of the Enlightenment at the expense of faith that sowed the first seeds of animosity:

Enlightenment-modern thought tended to focus on the omniscience of reason and its authority over tradition or faith, the uniformity of nature rather than supernatural control and interventions, and inevitable progress of humanity through education, reason and science (Olson, 2009:540).

Modernity was a euphoric celebration of the human potential for progress without recourse to the gods. This spirit is encapsulated in the writings of luminaries such as Immanuel Kant who declared that the Enlightenment could be summed up by the imperative *sapere aude* – “Think for yourself!” (Olson, 1999:541). Alexander Pope, borrowing from Socrates, advised the people of the Enlightenment to, “Know then thyself” and added, “Seek not God to scan. The proper study of mankind is man”. The enthrallment with nature and its laws is evident in his statement, “Nature and nature's laws lay wrapped in night. God said ‘Let Newton be! And all was light.’” (Olson, 1999:540). Although the 17<sup>th</sup> century political philosopher, John Locke, sought to ground the ideals of the Enlightenment in God, he ended up undermining the concept of God. Locke, in his treatise *Letter Concerning Toleration* (1689), demonstrates a precociously tolerant attitude in advocating for peaceful coexistence between adherents of different faiths during an age when religious heterodoxy incurred the wrath of ecclesiastical authorities who resorted to violent means in order to exterminate all heresy. Chappell (1994) opines that the revocation of the Edict of Nantes (1685) which had decreed a moratorium on the persecution of Calvinist Protestants by the Catholic French king, Louis XIV, triggered Locke's appeal for toleration.

In Locke's framework of religion and natural rights, all such rights and human moral actions are necessarily premised upon a divine will. For Locke, all duty leads back to God, and all moral principles and claims must emanate and be justified through him. Despite this assertion predicating morality upon a divine arbiter, he described the Law of Nature (derived from a divine will) as compatible with human reason and as demonstrable as the laws of mathematics. Although logically flawed, it laid the basis for influential scholars to subsequently extract such secular loopholes from the corpus of his writings and gradually hail Locke as the progenitor of an intellectual and rational approach to the challenges of the modern world – particularly in the arena of epistemology and political theory.

### 3.3.4. The influence of Liberal theology on fundamentalism.

A fetish-like obsession with a literalist reading of the creation account in Genesis characterizes the US creationist movement. This literalist lens did not emerge in a vacuum but was informed by the theological debates of the preceding centuries. The rise of liberal theology was one factor that mobilized some Christians to adopt a siege mentality where the in-group vs. out-group boundaries were sharply defined. In order to woo the critics of religion, the Prussian theologian considered the father of liberal theology, Friedrich Schleiermacher (b.1768), jettisoned authoritative, objective revelation in favour of *Gefühl* – “deep, inner awareness” (Olson, 1999:543). He declared the Bible to be fallible and not inspired. These tenets were enshrined in the Westminster Confession and Shorter Catechism of the 1640s. Schleiermacher also marginalized the doctrine of the Trinity citing its inaccessibility to religious consciousness. In a further iconoclasm of Church tradition, he undermined the dual natures Christology of Chalcedon (A.D 451) reducing Christ to the level of ordinary humans except for his unique God-consciousness. Other liberal theologians such as Albert Ritschl (b.1822) dispensed of traditional Christian doctrines such as the concept of radical sin, evil, God’s judgement, wrath and hell (Olson, 1999:551).

Liberal theology thus piggybacked on modernity and was perceived as a subversive juggernaut seeking to destroy Christianity. Of the influential four Princeton theologians, Charles Hodge (b.1797) is considered a precursor of twentieth-century fundamentalism. He vehemently condemned the teachings of Schleiermacher whom he denounced as having an insidious and devastating effect on Christianity. Interestingly, though the main objective of the fundamentalists was to restore Protestant orthodoxy by wrestling back the tenets of the inerrancy, infallibility and inspiration of the Bible, Hodge and his successor, Benjamin Warfield, appeared to be positively disposed towards evolution.

It comes as a surprise to many people that neither Hodge nor Warfield found Darwin’s theory of evolution particularly threatening to Protestant orthodoxy. In fact, Warfield studied biology in his undergraduate education and always considered himself a believer in evolution. Of course, together with all other conservatives they opposed naturalistic evolution and considered evolution true – if true – a means God used in creation (Olson, 1999:560).

Herriot (2009:2) reminds us that “...fundamentalism is *by definition* a modern phenomenon, because it is reacting against modernity”. In his view, there are five distinguishing features of fundamentalism, be it Christian, Islamic or Jewish. The first is a *reactive* mindset which perceives that the chief aim of secularism is to undermine religion. The next four are offshoots of the first. A *dualist* worldview that tends to dichotomize all phenomena. The centrality accorded a *holy book*

that supersedes all authority is another feature followed by a *selective* exegesis of the holy book as a mechanism to engage hostile forces. Finally, a *millennialist* view of world events, which often features an apocalyptic showdown between the forces of good vs. the forces of evil, is factored in as a strategy to cope with temporary setbacks and persecutions whether imagined or real. Herriot (2009:127) cites the American home-schooling movement as a case in point. Convinced that the secular educational system is antagonistically disposed towards faith, more and more Christian parents are opting to teach their children at home.

The best estimates come from the American government's National Household Education Surveys for 1996, 1999, and 2003 (Bauman, 2002; NCES, 2004). These show a rise from 636, 000 through 850,000 to 1,096,000 students being educated at home. This latter figure constitutes 2.2% of the school-age population...A soundly based estimate of under-reporting is around 25%, so the true figure for 2003 may approach 1,400,000 (Herriot, 2009:127).

It is worth the while to point out, as many scholars have, that the facetious stereotype of fundamentalists as anti-modern and uneducated is far from the truth (Olson, 1999; Herriot, 2009). In fact, children who home-school tend to score in the 70<sup>th</sup> to 80<sup>th</sup> percentile and are more likely to go to college (Herriot, 2009:127). Though suspicious of modern technology, fundamentalists are quite adept at exploiting technology to proliferate their beliefs (spoiling the Egyptians) as the sheer number of websites with religious content evidences. For example, the home-schooling movement in the USA - rather than join the band-wagon and access the free internet encyclopaedia -Wikipedia, decided to establish Conservapedia to counter what they perceive as the liberal discourse of Wikipedia. A comparison of both websites, in regards to dinosaurs, for instance, reveals their resistance to evolution:

**Wikipedia:** Vertebrate animals that dominated terrestrial ecosystems for over 160 million years, first appearing approximately 230 million years ago.

**Conservapedia...**mentioned in numerous places throughout the Good Book. For example, the behemoth in Job and the leviathan in Isaiah are almost certainly references to dinosaurs (Herriot, 2009:137).

The aspiration of creationists to teach creation science in public schools is highly controversial. The age-old question of the place of religion in a pluralistic society once again takes centre-stage. One political philosopher who was exercised in this regard was John Rawls. John Rawls main project was to arrive at "the most acceptable political conception of justice for specifying the fair terms of cooperation between citizens regarded as free and equal and as both reasonable and rational and (we add) as normal and fully cooperative members of society" (Moulin, 2009:163). He postulated a variant reading of the social contract that sought mutual consensus among citizens of the same society. Rawls contended that citizens in a plural society would fail to congregate around one moral source of authority to authenticate principles of justice binding on all. This modern

condition of what Rawls designates a “reasonable pluralism” (Moulin 2009:163), triggers a national discussion on what constitutes for basic rules. Before the rules are hammered out, though, Rawls envisions an “original position” where a necessary precondition is that members of the “reasonable pluralism” don a “veil of ignorance” where they bracket out their race, religion, social class and other stations in life when deliberating on the conception of justice as fairness. With these conditions fulfilled, Rawls argues that the stage is set for an “overlapping consensus”.

In these remarks I have assumed that in a nearly just society there is a public acceptance of the same principles of justice [...] there can, in fact be considerable differences in citizen’s conceptions of justice provided that these conceptions lead to similar political judgements. And this is possible, since different premises can yield the same conclusion. In this case there exists what we may refer to as overlapping rather than strict consensus (Rawls, 1971:340).

Rawls appears to invest too much confidence in citizens’ ability to “don a veil of ignorance” that brackets out social categories like race and religion. It would be redundant to repeat Habermas’ objections to the naive belief that religious prejudices can be suspended. How can one determine that citizens have assumed a “rational pluralism” from within Rawls’ hypothetical laboratory (original position)? On the contrary, in the debate between evolution and creationism in the educational domain, rather than “don a veil of ignorance”, the two combatants – entrenched in different philosophical, religious and epistemological premises, seem further apart than ever in reaching an overlapping consensus.

The three chapters discussed thus far will serve to inform the methodological considerations employed in the next chapter with special emphasis on issues of quality in interviewing. In addition, issues pertaining to access, identification and sample size will be discussed. This is interlaced with a brief but important consideration of the creation-evolution debate in the UK as evidenced in the debated wording of the official documents. The merits of critical realism as a philosophical position conducive to a study of this nature is explored followed by a brief reflexive consideration of, among others, perennial research challenges such as “insider vs. outsider” positioning.

## CHAPTER FOUR

### 4.0. Access, identification & sample size

Initially the projected number of participants was 13 males and 12 females. However, once the task of recruiting began, it was apparent that there would be some disproportion as accessing Muslim females was at times a challenge. In this study, I was able to interview 16 males and 9 females (see chapter 5, Table 5.2). Three reasons can be cited for this: more females than males expressed a lack of familiarity with the subject matter, especially the scientific technicalities with reference to the theory of evolution. Secondly, and perhaps commensurate with the perceived religious norms regulating male-female interaction in Islam, some females suggested I contact imams and other Islamic scholars whom, as traditional Islamic practice dictates, are all males. Finally, given that 5 of the 25 interviewees were expected to be imams and other official representatives which is often the reserve of men, I felt reasonably satisfied with 9 females and 11 males.

The conurbation of London seemed to be the most natural choice to do this research. There has been an exponential rise in Muslim demographics in Britain since the first census in 1951 where 5,000 Muslims alone were registered in the whole of Britain. This has increased considerably to 1.6 million in 2001 (Baxter, 2006). About 70% are British born and over a third (607,000) of the Muslim population resides in the London area (Coles, 2008:6). Indeed, as Lewis (2007:21) states “Ten of the twenty local authorities with the largest numbers and highest proportions of Muslims in England and Wales are London boroughs”. As this study is a qualitative research, rather than strive for adequate representation, the primary aim is to understand the worldview of a small number of Muslims and how this influences their attitudes towards the theory of evolution. With this in mind, and considering the unmanageable volume a larger number would generate, I interviewed 25 candidates - 3 of them imams.

There was also the issue of recruiting students alone or widening the circle to include others. I reckoned that to recruit students alone would not necessarily do justice to the subject matter at hand. As long as participants had fulfilled the basic criterion of having completed their GCSEs in Britain, this should be adequate. There are several reasons for this. To begin with, many students who go on to higher education may choose to specialize in a different field – say linguistics – where the theory

of evolution is of remote concern. On several occasions, participants, who were doing their undergraduate or postgraduate degrees in subjects other than science, would often pause and comment that all they can remember about the theory of evolution goes back to their GCSE or A-levels. Including others who currently are not students also acknowledges that individuals diverge in their personal interests and aptitude for self-learning. Indeed, one of the candidates most knowledgeable on the theory of evolution shared that he had a strong desire to teach himself the theory after the completion of his formal education.

Finally, a brief note is on order with regards to the identification and recruitment of the official representatives. Table 4 (Chapter 5) shows that 11 of the 25 interviewees were teachers. Of these 9 were engaged in various capacities as teachers in public/private schools. One was a lecturer employed on a full-time basis at a University. The other 2 imams, although employed to teach in Mosques alone, also wielded significant influence through the *madrassa* (schools or classes conducted after school and the weekends to promote Qur'an-based learning and Arabic). Initially the objective was to delineate only 5 official representatives of which 3 would be imams. However, it soon emerged that many among the teachers were also respected representatives among the Muslim community in various capacities. One was an itinerant lay scholar who has met and advised local authorities, while another worked as a religious youth advisor on a voluntary basis. Their responses often reflected this sense of authority and responsibility. Given their versatility and often overlapping roles, I felt there was no need to operate with the earlier 5 official representatives. I decided to treat the 3 imams separately as the main authoritative voice of the Muslims in the study, while the views of the teachers were highlighted separately when and if relevant to the particular consideration in the findings.

As all the candidates were fluent in English (many said that English was their first language), there was no need for any translation. On a couple of occasions, when interviewees struggled with a concept, I was able to elaborate in Somali for the Somali interviewees. As mentioned in the findings, some of the teachers repeatedly asked for assurances of anonymity despite having being thoroughly briefed before the interview. Caught in the turbulent confluence of their religiously-motivated views against evolution and perhaps the guilt felt in expressing views antithetical to the position of their employer, the state, this trepidation was palpable. This internal conflict raises some important questions with regards to the resilient nature of religious beliefs and the manner in which such religiously-driven teachers navigate in the schooling system. One teacher, who felt vulnerable after the interview, sternly asked me not to mention his name, school or whereabouts at all, and not to contact him again. I had called him after transcribing the interview to offer him a copy of the transcript.



In keeping with the 5 pillars of Islam, it is widely accepted that practicing Muslims attend Mosques in order to fulfil the requirements of the faith. This is why I focused on recruiting candidates through the Mosque and other avenues such as practising Muslim teachers. Between March and June, 2011, I sent approximately 25 emails to imams in Mosques all over London with only three positive responses. Though a few replied politely that the subject was too technical or that the appropriate spokesmen were away, the majority did not acknowledge the emails at all. Simultaneously, I also sent out emails to tentative gatekeepers outlining the aims of the research and the recruitment criteria (Information sheet and consent form). One of my gatekeepers, himself an official in a Mosque, turned out to be instrumental in initiating a snowballing effect which, before long, provided most of the candidates. This gatekeeper is a respected member of the Muslim community whose engagements include fund-raising projects to build new Mosques in the UK and other youth-related activities.

(Hammersley and Atkinson, 2007:30) define a gatekeeper as “...actors with control over key sources and avenues of opportunity”. They state that gaining access is not a straightforward process but can be fraught with practical challenges which require interpersonal resources, strategies, “native wit” and the ability to discover obstacles and devise effective means of resolving them. (Hammersley and Atkinson, 2007:41). In accessing the interviewees for this study, it soon dawned on me that a couple of the teachers, accessed through an imam in a Mosque, were popular and highly regarded members in the Muslim community. In fact, I soon found myself more reliant on them than the imams as they were more accessible and cooperative. In particular, one Muslim teacher was very helpful using much of his free time recruiting participants in a private capacity. Capitalizing on the good graces of these official representatives had many advantages. Given the standing of these men in their communities, many of the barriers that I may have faced were surmounted.

Secondly, given that some were qualified teachers in state schools, there was a vital need for assurances of anonymity given the strong creationist views held by these participants. Clearly, the invitation to participate extended through the official representatives did much to induce participation. Furthermore, without these intermediaries, the task of securing the participation of females would have been more challenging. It was made clear to these official representatives during the briefing session that no pressure was to be brought to bear on any one to participate. Only candidates above the age of 18 were to be approached. Those who agreed to be interviewed were given the information sheet 24 hours prior to the interview. They were thoroughly briefed and signed the consent form.

Most of the interviews took place in public spaces and were recorded. However, there were some instances where notes had to be relied upon as teachers, in particular, were distrustful of audio-recording the interviews. One imam, who was interviewed during the *madrassa* classes, had to often excuse himself as the children required his attention. The constant recitation of the Qur'an in the background also made transcribing somewhat a challenge. For purposes of this study, and as the title suggests, only Muslims who believe in divine creation as expounded by the Muslim faith were recruited. This is because this study considers the creation-evolution debate from within a Muslim worldview which traditionally embraces a default creationist stance. This is not to suggest that Muslims who do not believe in the theory of evolution do not exist, but that the views of the majority of Muslims are central.

Despite due diligence in safeguarding the principle of “non-traceability”, researchers are aware that foolproof anonymity can at times be a noble ideal rather than a realistic one. “A subject agreeing to a face-to-face interview, on the other hand, can in no way expect anonymity. At most the interviewer can promise confidentiality” (Cohen *et al.* 2007:64). Here a symbiotic collaboration with each participant that involves revision and feedback of transcripts and the freedom to withdraw from participation, among others, is hoped will enhance the quality of the interviews.

#### **4.1. Official documents considered**

Students are expected to have completed GCSE as a minimum. The rationale behind this was to enable comparisons with the teaching of the theory of evolution in Key Stage 4. Not least, many Muslims believe that children only reach the age of religious accountability at the age of 15. As such, students who are 18 and above will have had a few more years to mature and reflect on their religious faith in light of the theory of evolution. The teachers and imams were asked mainly about their interpretation of the religious texts and how this compares with the statements in the National Curriculum and biology textbooks. Here I explored the National Curriculum for science Key Stage 4 which the students and teachers have some familiarity with. In 2006, for example, the government, in response to creationist material sent to schools in the UK, prepared a “Creationism Teaching Guidance” ( see Appendix E) which stated that creationism doesn't belong in the realm of science but leaves room for teachers to explore the appropriate arena for creationism to be discussed (Teachernet.gov.uk, 2006). Questions of this nature were explored. Obviously, some acquaintance with the statutory contents and guidelines with regards to the teaching of the theory of evolution in schools funded by the public purse is salutary. It is for this reason that a brief outline of the trajectory of the debate in the official arena in the last decade is attempted in chapter 5.2. There the

role of various stakeholders e.g. British Humanist Association, various creationist organisations (some based in the USA), the TES (largest teachers' networking website) and the British Centre for Science Education, among others, are considered. Particular attention is given to the contentions arising from diverging interpretations of the curriculum phraseology in relation to the teaching of the theory of evolution.

I was left with the impression that many of the interviewees did not have an adequate grasp of the official twists and turns with reference to the debate. The aforementioned stakeholders were viewed suspiciously as agents of a secular state determined to undermine creationism and religion by extension. The findings, however, did not detect any attempt or even desire to organize and mount a challenge against the mandatory teaching of evolution in schools in the UK. This contrasts starkly with the high-decibel engagement of Christian creationists in the USA and Turkey. This is not to say that Muslim organisations lack the commitment or the resources to front causes given that Muslim organisations have been known to lobby effectively for specific interests such as independent Muslim schools.

#### **4.2. Methodological considerations.**

Reflectivist or postpositivist theorists have levelled charges of methodological imperialism against positivist orthodoxy. In their view, claims of arriving at unambiguous, disinterested and objective forms of knowing are disingenuous. Philosophers of science often rebut this allegation as a straw man arguing that such a reductionist position rarely exists in social science (Kvale and Brinkman 2006:58). Nevertheless, Qureshi (2004), among others, affirms the hierarchical nature of knowledge with “randomized control trials” sitting at the apex. Positivist theorists, on their part, critique the postpositivist “heuristic paradigm” (Pieper, 1989) stance as subjectivist and relativist with no rigorous scientific standards for conducting proper research. The hegemonic hold that the positivistic paradigm held until recently can be gauged from the dismissal of postpositivist research as “hallucination” (Brekke, 1986/1995). For those who maintain that the two paradigms are binary opposites, any claim that they share much in common may sound perverse but this is precisely the position a growing number of researchers are embracing (see Creswell and Clark, 2007, for example). Some have gone beyond calling for a détente (Arnd-Caddigan and Pozzuto, 2006) to calls for a fruitful cross-pollination. There is even a *Journal of Mixed Methods Research* (Sage).

At the heart of the quantitative/qualitative debate are issues related to epistemology and ontology. The epistemological question can be framed as: what is the best way to understand the world? This theory of knowledge, however, cannot be decoupled from the notion of ontology: what is the nature

of the world one wishes to know about? The positivist paradigm can be subsumed under an objectivist ontology (Bryman, 2004) which posits that there exists a mind-independent reality (metaphysical or naive realism). Social entities (Durkheimian “social facts”) and even cultures are perceived to have an almost tangible quality as external and independent repositories into which individuals are socialized. Advocates of this school of thought believe that the bias of the human mind can be circumvented if researchers adhere strictly to a specific methodology (e.g. random controlled trials), in apprehending the “truth” understood as conforming to an external reality (David, 2005). What is emphasized here is the valorisation of a specific research method which, if deviated from, vitiates the research rendering it invalid (understood as a distortion of reality).

This belief in a “world out there” was critiqued by postpositivists who contended that logical positivists ignore the sociolinguistic and discursive aspects underpinning human endeavour. The Danish philosopher, Kierkegaard, critiqued positivism and argued that subjectivity should be regained, while Habermas accused the scientific mentality of aspiring to unassailable religion (Cohen *et al.* 2007). Reality, some postpositivists maintained, is ontologically mind-dependent with no objective reality of its own. Postmodernism and deconstructionism operate under a de facto ontologically materialistic worldview. For postpositivists reality always bears the hallmarks of an anthropocentric philosophy. Whereas positivistic methods hinge upon a nomothetic aspiration that seeks to discover general laws, interpretivists (i.e. the epistemological stance of postpositivists) emphasize the particular and the individual (idiographic) to capture the elixir of subjective “truth” (Cohen *et al.* 2007:8). Ethnographers, for instance, assert that the ephemeral nature of life phenomena necessitates humans researching humans through prolonged participant immersion in a natural setting. One of the fathers of anthropology, Bronislaw Malinowski, referred to humans as “the most elusive of materials” (Malinowski, 1961:11).

Patomaki and Wight (2000) draw on Bhaskar’s critical realism to argue for common ground between positivism and postpositivism. It is this ontological position which informs this present study. They are of the persuasion that both paradigms emanate from broadly similar metaphysical presuppositions despite the rhetoric. Bhaskar calls this the “problem-field”. What is of chief concern here is the attention paid to issues of ontology rather than the traditional focus on epistemology. Researchers on both sides of the divide still operate in the shadow of David Hume’s influential theory of causation. Crudely summarised, the anti-theological Hume was sceptical of a reality external to the human mind. Human experience is conjunctional because it is the only observable phenomenon. Privileging the necessary nexus between the subject who experiences and the experience itself, Hume argued, “Science of man is the only solid foundation for the other sciences” (Hume, 1967/1739:88). Hume essentially collapsed the ontological with the

epistemological which Bhasker (1975) labels the “epistemic fallacy”. Immanuel Kant, eager to refute Hume’s scepticism, weighed in on the “problem-field” by positing a phenomenal world – basically the Humean world of empiricism – in addition to a transcendental noumenal world which encompassed universal categories such as time, space, form, content and meaning. This postulation is dualistic because Kant believed that noumena (moral reasons) are independent of phenomena (causal deterministic processes). Far from ameliorating or undermining Humean scepticism, Kant inadvertently succumbed to an impoverished ontology:

The existence of another world (Kant's noumenal world) opens up the possibility of transcending Hume, but Kant closes off this possibility by divorcing the world of reason from that of causation. In effect, Kant forces a sharp separation between the material and ideational. And what has been ripped apart in this manner is very difficult, if not impossible, to reunite. Scholars operating in the shadow of this “problem- field” are now faced with two alternatives; either accept the phenomenal world as it is and with it Hume's atomistic and deterministic individualism, or divorce the world of reason from that of physical causation and perhaps even causation itself. Explanation vs. Understanding, Rationalism vs. Reflectivism, Positivism vs. Post- positivism are all embedded within the same “problem-field” (Patomaki & Wight, 2000: 222).

As mentioned earlier, this study privileges a critical realist ontological stance. This, I argue, is commensurate with the worldview of Muslims for whom the concept of *tawhid* (see chapter 2.5.1) - the unity and pre-eminence of God which sacralises society – negates any conceptualization of pockets or domains where God-consciousness is absent or suspended. The adoption of such a philosophical perspective, it is believed, will be more conducive to approximating the views of Muslims with regards to the creation-evolution debate which, obviously, has ontological considerations at its core. This is not synonymous with sanctioning the legitimacy or soundness of such a belief, but a humble concession (in the critical realist tradition) that events and experiences may and *can* be triggered by powers and structures not easily susceptible to detection through experience and discourse (Patomaki & Wight, 2000). What this calls for is some tolerance of differing ontological stances as appropriately summed up in the view below:

If ontologies are ultimately beliefs, rejecting a method or technique from a different ontology solely due to its difference is analogous to declaring that a Jewish person is not religious because he or she does not observe Christmas, or declaring a Christian non-religious because he or she does not observe Yom Kippur. Judaism and Christianity are closely related belief systems but dialogue across the division of beliefs has proven quite difficult (Arnd-Caddigan & Pozzuto, 435:2006).

In what follows I will take a closer look at critical realism and elaborate on the appropriateness of this philosophical perspective for this current study.

#### 4.2.1. Critical realism.

Critical realism is associated with Roy Bhaskar who first published a *Realist Theory of Science* in 1975. Discarding the postmodern reductionism which only admits of a sensory perception of causality (a derivative of Hume's scepticism), Bhaskar argues for the existence of underlying causal powers and structures in the social world susceptible to investigation, despite evading sensory perception. In a laboratory, Bhaskar (1975) argues, scientists employ the experimental method to control for causal factors. However, the element of contingency cannot be eliminated or suspended in an open social system.

We can easily imagine a world similar to ours, containing the same intransitive objects of scientific knowledge, but without any science to produce knowledge of them. In such a world, which has occurred and may come again, reality would be unspoken for and yet things would not cease to act and interact in all kinds of ways (Bhaskar, 1978: 22).

Contra postmodernists, who ignore causal powers, critical realists explore the dynamics of the interface between these mechanisms and contingent factors within a multifaceted context (Roberts, 2003) (Roberts, 2003). Thus critical realism is realist because it is an attempt at a re-vindication of ontology rescuing it from the solipsism of anti-realists and radical constructivists. It is, on the other hand, critical because it subscribes to the fallibilism of epistemology. In other words, although an ontological reality independent of the object exists, a critical approach is crucial given the transitive nature of knowledge (Scott, 2005). Critical realism maintains the distinction between the real (intransitive), the actual and the empirical. It further destabilizes attempts to collapse the ontological dimension with the epistemological (Bhaskar and Lawson, 1998). Archer (1982), for example critiques Giddens's structuration theory for not making a sharper distinction between agency and structure (voluntarism and determinism). She forwards the morphogenetic argument which accords different time periods to structure and action captured in two propositions: "Structure logically predates the action(s) which transform it, that structural elaboration logically postdates those actions" (Archer, 1982:468).

The salience of critical realism to social science is its understanding of the world as a stratified realm where mechanisms operate on a plethora of planes in an emergent fashion. The emergent properties of objects, however, cannot be reduced to the levels from which they transpired. This interaction cross-pollinates to create new combinations (Bhaskar & Lawson, 1998). Central to social science is the designation of the structure/agency nexus as a framing device (Scott, 2007).

Bhaskar is concerned to underscore the manner in which intentional agency is influenced by social structures. Human acts such as *saying*, *making* and *doing* do not occur in a vacuum but as typical modalities secreted by the influence of social structures (Bhaskar, 1998).

People cannot communicate except by utilising existing media, produce except by applying themselves to materials which are already formed, or act save in some or other context. Speech requires language; making materials; action conditions; agency resources; activity rules. According to Bhaskar, then, transcendental analysis reveals that social structures are an ontological precondition for intentional agency. Notice here that he is not attempting to reduce intentional agency to social structure, but to show that both social structure and agency must exist, and, correlatively, both society and individuals (Kemp, 2005, 177,178).

In accessing the beliefs of Muslims with reference to the creation-evolution debate, clearly the persistent and interlocking aspects of the various levels must be accounted for. “The existence of one necessarily presupposes the other” (Sayer, 1992:89). For instance, the Muslim individual’s intentional agency, understood here as her opinion of the theory of evolution, tacitly triggers a complex interplay of horizons. At the apex, and consonant with a *tawhidic* porous universe, is the ontological acknowledgement of God as the Supreme Creator and determinant of existence who is transcendent and mind-independent of the individual. One can also argue that the Qur’an itself is considered an ontological reality transcending the spatiotemporal having eternally pre-existed in heaven, according to Islamic theology. The information divulged during the interviews will in turn be informed and coloured by the influence of societal structures both tangible and intangible. Whereas the Mosque serves as a tangible and central pillar around which revolves activities that shape Muslim opinion and behaviour, the worldwide and amorphous Muslim community (*ummah*) is another layer that exerts a powerful influence on the individual psyche.

This *ummah* often encompasses deceased luminaries of the faith whose example and memory transcends the limits of space and time in a coterminous manner (e.g. the companions of the prophet Muhammad or *Sahaba*). Arriving at some understanding of the issue would require the peeling away of each of these intrinsically linked *relational* and necessary layers without committing the “epistemic fallacy” of collapsing them into a unit is the principal task of social explanation (Bhaskar, 1998). This paradigm attempts at mining social meaning at the vertex of intentional agency and properties of structures aligning with critical realism’s understanding of complex events as codetermined by constellations of causal mechanisms.

On an epistemological level, the transient nature of knowledge, coupled with the accompanying fallibility of theoretically-imbued science, exercises the researcher in critically exploring statements

about the nature of reality (Scott, 2007:14-16). A Muslim's understanding of the evolution creation debate can only be as robust as her understanding (i.e. interpretation) of the Qur'an. But few would deny that this a field riddled with tensions and controversy as chapter 1.3.1.demonstrates. This will necessitate some discussion of hermeneutics which engages with the socio-linguistic universe of the Arab/Muslim world understood as discursively produced.

Unlike natural structures, social structures do not exist independently of the agents conceptions of what they are doing in their activity. This means that a hermeneutic dimension is intrinsic to real social research...But in contrast to some forms of hermeneutics, concept-dependency for Bhaskar does not undermine the realist premise of the object's intransitivity...The codetermination of social structure by social knowledge thus introduces an obligatory reflexivity into the social sciences (Steinmetz, 1998:181).

In bestowing recognition upon "the irreducible hermeneutic moment in the social sciences through its elaboration of the transformative nature of social action and the absolute centrality of human agency" (Bhaskar, 1998), critical realism lends weight to the continuing relevance of qualitative research (Klegg, 2005:421,422) I turn next to the subject of hermeneutics.

#### **4.2.2. A hermeneutical fusion of horizons**

A central premise underpinning hermeneutics is that human beings *are* by definition interpretive creatures (Swinton and Mowat, 2006:107). It is in this sense an ontological stance for to be human is to interpret. Hermeneutics as a research methodology seeks to formally capture the plethora of ways in which this ontological predilection interprets the world implicitly, explicitly, consciously and subconsciously. Rather than rigorously attempt a neutral distanciation, the researcher is called upon to acknowledge her pre-understandings and prejudices arising from a particular socio-cultural embeddedness.

To try to eliminate one's own concepts in interpretation is not only impossible, but manifestly absurd. To interpret means precisely to use one's own preconceptions so that the meaning of the text can really be made to speak for us (Gadamer, 1981:358).

Indeed, Hans Georg Gadamer (1900-2002) was critical of the constricting effects of a method because each method is loaded with its own specific worldview which makes no concession to the worldview of the researcher. On the contrary, the researcher is expected to jettison his socio-cultural embeddedness and adopt wholesale the narrow confines of the method.



Gadamer's key point here is that we must become aware of our embeddedness or historical situatedness and constantly reflect on the ways in which this situatedness influences the way that we interpret our world (Swinton and Mowat, 2006:111).

The hermeneutical perspective outlined above puts Gadamer on a collision course with Husserlian phenomenology. For Husserl, phenomenology demands the researcher "strip away" or suspends her beliefs and preconceptions in order to approximate the essence of the phenomenon (Corben, 1999). Gadamer rejects the feasibility and desirability of such a bracketing of preconceptions and prejudices but averred that they are essential ingredients in making sense of the world. For a genuine experience to transpire it must thwart knowledge accrued through a previous experience, according to Gadamer. In this manner, this constant dialectical, recursive and reflexive nature of experiential learning typifies the hermeneutical circle allowing for what Gadamer calls "historically effective consciousness" (Swinton & Mowat, 2007:112). With regards to this present study, and commensurate with critical realism, "Gadamer's position here is a reassertion of the ontological demand for the significance of contextuality in understanding" (*Ibid*, 2007:113).

What is of particular salience with reference to this study is Gadamer's "fusion of horizons". Advocates of hermeneutics believe that the constantly evolving experience fields or horizons of the subject (in relation to the object) can fruitfully cross-pollinate or fuse with that of the object of inquiry, with new meanings emerging. For example, a contemporary Muslim reading the Qur'an may arrive at a different interpretation of the text as intended by the author. Proponents of a fusion of horizons like Schleiermacher and Gadamer would approve of such a new and productive reading as they argue that the author's intentions do not determine the meaning of the text. However, how can one adjudicate between the rival claims of literalists and those advocating a novel approach to revelation?

The Muslim scholar, Fazlur Rahman (1919-88), studied Gadamer's hermeneutical approach with mixed reviews with regards to its application. For him, a Qur'anic hermeneutics necessitates an understanding of the totality of the text rather than a privileging of individual texts severed from the whole (Harrison, 2007:135). Rahman's *ijtihad* (sustained reasoning) calls for modern interpreters to engage in a hermeneutical cycle where:

In order to apply the Qur'an's message to contemporary problems, one must first understand the various parts of the Qur'an in the context of their origin, and then one must seek to understand specific verses in the context of the whole. Only then can one enunciate statements of general moral-social objectives that can be 'distilled' for the specific texts in the light of the socio-historical background (Harrison, 2007:135).

Although Rahman departs from Gadamer's hermeneutics in investing some confidence in the reader's ability to objectively capture the original intent of the author, he radically acknowledges

the conditional nature of the interpretation distilled in the latter part of the hermeneutical circle. According to him, this is because the context in which the interpretation transpires is always dynamic, which liberates the reader from extrapolating features of the original context onto the modern world (Harrison, 2007). Ebrahim Moosa took Rahman's radical theory of emerging truth to its logical extreme suggesting that the Qur'an's message is predicated upon an audience of listeners who understand its text and engage with a performative revelation. In his mind, the Qur'an presupposes this listening and creatively interpreting audience without which it ceases to exist. He berates the audience for failing to play their role, "Instead many people (modern Muslims) read it like one reads a medical textbook or an engineering manual. So the Qur'an has been turned into a sovereign, passive, non-interactive text" (Harrison, 2007:138).

It is abundantly clear that this study, focusing on the creation-evolution debate in Islam, is necessarily one where the vicissitudes of the interpretation of religious texts (Qur'an and Hadith) are central. Does the Qur'an declare unequivocally a creation *ex nihilo* of the first couple – Adam and Eve – or is there room for alternative readings susceptible to an evolutionary framework? It is reasonable to assume that the final outcome will hinge on which tradition - whether a literalist or figurative hermeneutic approach – gains ascendancy. Having considered hermeneutics as an approach that reasserts the ontological demands of contextuality, the next section borrows from Swinton and Mowat (2006) to argue for employing hermeneutic phenomenology as a methodology and a method providing both an epistemological and ontological framework enabling a process of qualitative research.

#### **4.2.3. Hermeneutic phenomenology.**

Whereas a method implies a concrete technique with the aim of gathering data and analysis, methodology casts a wider net signifying an overall approach to a field. Here one can subsume related methods which share common philosophical and epistemological assumptions. This study employs interviews as informed by a hermeneutic phenomenological approach (Kvale and Brinkman, 2009; Swinton and Mowat, 2006). A number of studies have emerged utilizing hermeneutic phenomenological approach particularly with regards to spirituality and care:

[...] lived experience of spiritual distress (Smucker, 1996), spiritual relationships (Stiles, 1994), recovery from alcoholism (Bowden, 1998) the essential elements of spirituality (Tongprateep, 2000) and hope (Breitbart & Heller, 2003) (Swinton and Mowat, 2006).

Phenomenology, as alluded to earlier, attempts to resist and suspend any theoretical overlay imposed by the researcher. An underlying belief is that the actor's own perspective is paramount to the quest for truth understood as what people perceive it to be. For Van Manen (1990:9), phenomenology is "the way we experience the world pre-reflectively, without taxonomizing, classifying, or abstracting it". The researcher sees her task as one that is an expression of fidelity to the phenomena under investigation. Husserl, for example, spoke of a "free variation of fantasy" where the phenomenon is exhausted for possible variations until that which remains constant emerge as the essence of the phenomenon (Kvale & Brinkman, 2009:27). Phenomenology is reductionist in the sense that what ethnographers refer to as the "emic" (insider perspective) and "etic" (outsider perspective e.g. the corpus of scientific literature) perspective is suspended or bracketed out. The existence or lack of the content of experience is done away with in the drive for an unadulterated approximation of the phenomena. Indeed, semi-structured interviews attempt to engage in a dialogue with interviewees with the express purpose of gaining some insight into the subject's own lived world with "respect to interpretation of the meaning of the described phenomena" (Kvale & Brinkman, 2006:27). This subject will be elaborated on later.

It is quite obvious that hermeneutics and phenomenology appear to contradict each other. The former valorises bias and socio-cultural embeddedness as preconditions for proper research as opposed to the latter which seeks to sanitize the research process of such baggage. Despite this, Swinton and Mowat, (2006:108) underscore three points of complementarity:

1. Both assume an "active, intentional, construction of a social world and its meaning for reflexive human beings" (McLeod, 2001:57). A Phenomenologist does not preclude the possibility of meaning crystallizing as a result of interpretative processes although precluding this aspect while studying phenomena.
2. A crucial dimension of both hermeneutics and phenomenology is the preoccupation with linguistic material. Text-based language is carefully sifted for meaning as a window into the human world of meaning.
3. The key factor driving both hermeneutics and phenomenology is *understanding*. This contrasts with the scientific endeavour which strives to be *explanatory*.

The advantage of combining the two approaches, it is argued, provides the researcher with a viable working tool that draws on the strengths of both. Phenomenology disciplines the researcher to pay attention to the descriptive side of how things appear. Gadamer may have a point in critiquing the absurdity of suspending bias but the phenomenological constraint, at the minimum, ameliorates any

tendency to conflate the two horizons uncritically into a nebulous whole. Conversely, hermeneutics extracts a degree of assent from the phenomenologist to the effect that there are no such things as uninterrupted phenomena. Ultimately, the observed and described “facts” must be written down – a process mediated through language understood as socially produced discourse.

This philosophical framework has been germane to the task of considering every stage of this current project. The phenomenological dimension has served to challenge notions of prior familiarity with Islam and views of Muslims with reference to the creation-evolution debate. In the hope of reducing bias, a number of Muslim sources were consulted in the literature review process (imams and other practising Muslims were asked to recommend literature) and the selection of participants. The interview guide itself attempted to correspond with the views gleaned from the literature and informal discussions with Muslims. This said, the hermeneutic aspect warrants a fusion of horizons where the text produced through interviews develops as a *circulus fructuosus* where a first, second and even third order of hermeneutical interpretation of the interviewees’ and interviewer’s meanings - as expressed in the interview conversations - emerge (Kvale and Brinkman, 2006:313). The third level can emerge in instances where interviewees rectify or nuance their initial statements when reviewing the transcripts of the interview which in turn triggers a third order hermeneutic engagement on the part of the researcher.

This study employs in-depth interviews informed by a qualitative research paradigm as discussed thus far. The next segment considers issues of quality in interviewing and critiques the application of quantitative methods to a study exploring a complex subject like the creation evolution debate.

#### **4.3. “Quality” in interviewing.**

Recent years have witnessed a cornucopia of theorizations each vying to demonstrate the quality of qualitative interviews. This section will seek to argue that quality, albeit a contested term, hinges on the ability to demonstrate a high degree of commensurability with assumptions about the manner in which interviews are employed. Researchers emphasize different but related dimensions of interviewing in grappling with issues of quality: “credibility and thoroughness” (Rubin and Rubin, 2005), “validity” (Kvale, 1996) and the four “Rs” – representativeness, reactivity, reliability and replicability (Mishler, 1986). “Quality” in qualitative interviewing evades any monolithic description in the literature. However, it is possible to arrive at a synopsis of the most salient features that can serve to sensitize researchers to various conceptions of interviewing to ensure sound quality.

- What are the theoretical assumptions underlying this conception of interviewing? What kinds of research questions are made possible from this perspective?
- What methodological issues are highlighted in the literature in qualitative inquiry with respect to this conception?
- What are the criticisms of this conception of interviewing and/or research?
- What kinds of approaches have researchers documented to establish the “quality” of research using interviews from this conceptualization? (Roulston, 2010:204).

It is argued that because this study aims to explore the views of Muslims with regards to the theory of evolution, the interview method is most commensurate with the points raised above. The study seeks to understand the manner in which the worldview of those interviewed influences their understanding of the theory of evolution. The philosophical underpinning of a qualitative research (methodology), such as this study, is one that takes seriously the participants’ interpretation of phenomena as they make sense of the world while simultaneously acknowledging the need for a hermeneutic approach that concurrently and symbiotically makes sense of the interview conversation and subsequent text with the interviewee (phenomenological-hermeneutic interview).

It is further argued that employing a quantitative approach (e.g. questionnaire design) in a study that considers the manner in which religious beliefs impact upon scientific theories may not do adequate justice to the task of exploring the fine gradations and subtleties arising from such a worldview. For example, a recent quantitative study, involving 187 female students attending a sixth-form study day convened by the North of England Institute for Christian Education features the following statement: “I accept the idea of evolution creating everything over millions of years” (Astley and Francis, 2010:194). The problem with such a formulation is twofold from an Islamic perspective. The first objection has to do with the ambiguity or deliberate silence with regards to the role of a Creator which is central to a Muslim’s worldview. It would be reasonable to assume that a Muslim student may hesitate to answer given the ambiguity of the “God-factor”. The role (or lack thereof) of God should be made explicit. Secondly, many Muslims can subscribe to the view that all living things, *except humans*, evolved from previous forms of life, which the statement only partially addresses. The responses explored in chapter 6, for example, confirm such a partial acceptance of the theory of evolution. Chapters 2 and 3 go to some length to demonstrate the similarities and differences between Islamic and Christian creationism. The point here is to underscore the challenges a method such as a questionnaire would encounter in attempting to grapple with a complex field such as the creation-evolution debate.

The statement, “I accept the idea of evolution creating everything over millions of years” additionally contains two irreconcilable terms (as far as contemporary scientific understanding is concerned). Two incommensurable categories have been conflated: “evolution” and “creation”.

Evolution cannot “create” anything as it only works on random mutations through non-random natural selection on *already existing living matter*. How this living matter or first organism first came into existence is a separate issue altogether. Dawkins (2009:416) himself urges caution:

We know a great deal about how evolution has worked ever since it got started, much more than Darwin knew. But we know little more than Darwin about how it got started in the first place. This is a book about evidence, and we have no evidence bearing upon the momentous event that was the start of evolution on this planet.

In other words, there is a lack of precision as to what is meant by “evolution creating everything”. The short answer to such a statement is that evolution did not *create everything* but was itself contingent upon the first act of spontaneous generation of life for its own existence (natural selection kicked in *post hoc*). It is my contention that using a questionnaire alone runs a greater risk of running into such blunders given a positivistic paradigm concerned with numbers, concision, precision and brevity. Reiss and Jones (2007:2,3) also highlight this conundrum: “There is a tendency to polarize religion and science in questionnaires that focus on the notion that either God created everything or God had nothing at all to do with it.” Bolognani (2007) reflects on the challenges of gaining access to Muslim communities in West Yorkshire post 9/11 and suggests that interviews and ethnographic approaches can help to counterbalance the otherwise essentialized view of Muslims promulgated by the media:

The high degree of personal involvement of ethno-anthropological strategies helps to facilitate the development of an understanding of the material offered by interviews and participant observation that surveys and quantitative methodology might struggle with, given their degree of detachment (Bolognani, 2005:290).

As discussed earlier, this study adopts a hermeneutic- phenomenological lens during the process of interviewing. Inspired by phenomenology, the life world of the interviewee – the everyday lived world as experienced by him – is given due prominence (Kvale & Brinkman, 2009:28). The phenomenological dimension requires the researcher to adopt what Kvale and Brinkman, 2009:28 refer to as “deliberate naïveté” where presuppositions are curtailed or bracketed out in order to make room for new “discoveries” of unexpected phenomena. Furthermore, this interview lens is an apt tool to explore the *prima facie* ambiguities or obfuscations that may have arisen due to failure of communication (e.g. through unclear/complicated language). This does not mean that all answers will be free from inconsistencies or paradoxes but that further amplification and clarification can address the lion’s share of such misunderstandings.

The hermeneutic dimension of the interview, as mentioned earlier, follows a dialectical back and forth process between part and whole (hermeneutic circle) during the interview and later with the

text. Consonant with Gadamer's fusion of horizons, the objective is to initially make an ever spiralling hermeneutic interpretation based on the subject's answers. These answers are again merged together with the presuppositions of the interviewer (experience world along with knowledge gleaned from the literature) to sift for new meaning. The denouement of this *circulus fructosis* is a "good gestalt" Kvale & Brinkman (2009:210) where the part and whole arrive at some equilibrium.

The rationale behind the design of a semi-structured interview guide is considered in the next section.

#### **4.3.1. Semi-structured interviews: between agency and structure.**

The intrinsic strength of the interview is the flexibility, spontaneity and use of multi-sensory channels (Cohen *et al.* 2007:349). In designing the interview, I settled upon a semi-structured format which has:

[...] a sequence of themes to be covered, as well as some suggested questions. Yet at the same time there is openness to changes of sequence and forms of questions in order to follow up the specific answers given and the stories told by the subjects (Kvale & Brinkmann, 2009:124).

Thus the semi-structured interview is a discursive generator engineered with the purpose of gaining insight into the interpretive repertoires at the informants' disposal. After having reached a point of some saturation with reference to what the literature could offer on the subject, the interview guide was constructed under the assumption that many Muslims reject the theory of evolution for various reasons such as: a literalist reading of the account of creation in the Qur'an; a historical and traditional trajectory that has been somewhat resilient to aspects of Western modernity and all that it entails (e.g. the privileging of reason and autonomous inquiry during the Enlightenment), and an abiding suspicion that the theory of evolution is underpinned by an atheistic agenda masquerading as science, to name a few.

In framing the semi-structured interview guide, room was made to explore the manner in which such external and pre-existing schemas may have contributed to the current views held by the interviewees. This aligns with the aforementioned mechanisms and actual events that impact upon the intentionality of agents as outlined by critical realism. The latter concern with regards to issues of external mechanisms, structures and power is also addressed by researchers in education.

The danger of interactionist and interpretive approaches is their relative neglect of the power of external – structural – forces to shape behaviour and events. There is a risk in interpretive approaches that they become hermetically sealed from the world outside the participants' theatre of activity – they put artificial boundaries around the subjects' behaviour (Cohen *et al.* 2007:26).

The semi-structured interview guide was thematically arranged to account for some of these external mechanisms and explore the latent or manifest influence they had on the participants. In order to better understand the rationale driving the interview guide, I will turn to Bourdieu's theory of cultural capital. Bourdieu's theoretical framework of *Cultural Capital* is best conceptualized as the accumulated symbolic goods an individual or group possesses. Cultural Capital manifests itself in approximately three forms: *habitus* or disposition of body and mind as a personified state; books, paradigms and methods as the second objectified state, and the institutionalized state that comprises schools, diplomas and identification papers (Andersen and Kaspersen, 1996). In his deliberations, he attempted to arrive at some equilibrium between the constraints of structural apparatuses and individual agency. It is in the confluence of the two that he refined his concept of *habitus*.

The word *disposition* seems particularly appropriate to express what is covered by the concept of *habitus* (defined as a system of dispositions): it expresses first, the *result of an organizing action*, with a meaning close to that of words such as “structure”; it can also denote a manner of being, a habitual state (especially of the body), and, in particular, a *predisposition*, tendency, *propensity* or *inclination* (Bourdieu and Passeron, 1990:67).

Central to the word *habitus* is the connotation that these dispositions are socially acquired and entrenched over a period of time. *Habitus*, for instance, manifests itself as cultural-specific etiquette where the dictates of good-breeding in a given society determines posture, table manners and other social sensitivities. For Bourdieu (Bourdieu, 1997; Bourdieu & Passeron, 1990) *habitus* was not identical with cultural expressions nor is it to be conceived of as a reified generative force in an individual. What is relevant to this study is his conclusion that *habitus* can be altered through an appropriate “pedagogic action” and “pedagogic authority” (Bourdieu & Passeron 1990). Pedagogic action refers to the teaching that occurs in the classroom while pedagogic authority is underpinned by the prevailing structural apparatus in the school. Bourdieu understood that *habitus* is rarely something that develops in a void but is continually shaped by individual agency and structural constraints. In the classroom, the two can combine once again to alter *habitus* which is not static but vulnerable as an open-ended aptitude. However, he further elaborates that just as *habitus* has congealed through societal impression for many years making it durable, similarly, any pedagogic action that seeks to alter *habitus* must be exerted in a sustained manner over a durable length of time (Bourdieu & Passeron, 1990).



Clearly the views of participants have been forged in the confluence of the competing forces of the home versus that of the school. From Key Stage 4 and upwards, pupils will have been exposed to a prolonged pedagogic action that seeks to inculcate the teaching of evolution. This pedagogic action is sanctioned by the school wielding pedagogic authority. Conversely, on the domestic front, the influence of significant others (parents and kith and kin) also exercises a powerful informal “pedagogic action” with regards to the issues of the origin of life. *Madrasas* (Islamic institutions) would be the informal equivalents of the official schools that exert “pedagogic authority” which counterbalances the theory of evolution. The latter are also the recipients of an age-old Islamic tradition that, obviously, has been inculcated over centuries. The pupils, it can be argued, find themselves caught in the “firing line” of these competing pedagogic actions and pedagogic authorities each seeking to inculcate a specific *habitus* or disposition towards the theory of evolution. The semi-structured interview guide has attempted to take cognizance of the views (*habitus*) of Muslims with regards to the theory of evolution as *a result of an organizing action/s* (Bourdieu, 1990).

As Malinowski (1961) knew only too well, studying humans is indeed an elusive endeavour. Without doubt every method does present some challenges. A reasonable objective is not to eliminate every weakness or shortcoming but to sensitize the researcher to the many potential pitfalls. In what follows, two such challenges are outlined: the challenge of managing multiple components in the interview process and issues concerning asymmetric power relations.

#### **4.3.2. Some challenges with regard to method.**

Interviewing may appear to be a straightforward process but as Kvale and Brinkman (2006) and others have often cautioned - good interviewing is akin to a craft. The dexterity required is often cultivated over a period of time. A particular challenge for a novice is the juggling of multiple voices and patterns of thought concurrently. Individuals communicate in a myriad of ways both verbally and non-verbally which places some burden on the interviewer to constantly pick up the cues and explore their multilayered meanings. The difficulty - perhaps the impossibility - of teaching such a skill need not be laboured here. Besides the often recommended apprenticeship, it is imperative that the researcher develops a heightened sense of awareness with reference to the multiple components intrinsic to the interview method. (Dilley, 2000:134), for instance, outlines 5 such activities which the interviewer must take cognizance of:

- Listen to what the person is saying (as well as observe how he is saying it).
- Compare what the person says to what we know (from previous interviews and/or background studies)
- Compare what the person says to the questions on the rest of the protocol.
- Be cognizant of time – to make judgements on whether to stray from the protocol or stick to it.
- Offer information to prompt reflection, clarification, or further explication.

In addition, Dilley (2000) stresses the importance of active listening suggesting the interviewer talk no more than 20 per cent of the time and listen 80 per cent. Marc Jopin (2002), however, cautions westerners regarding their tendency to universalize the power of the word and text. In critiquing the use of dialogue as a method of religious reconciliation in the Middle East, he states, “I would argue that dialogue itself, as a method of peacemaking is culturally charged, maybe even biased, and may not satisfy or correspond to the best cultural methods that a group may possess” (Smock, 2002:43). For example, many African countries still adhere to gentocratic (rule by elders/chiefs) traditions, and the students and educators often answer with a nod or monosyllables. When asked to elaborate, they often defer to their teachers and superiors respectively. Furthermore, Dilley’s (2000:134) statement, “Listening requires more than one’s ears; it necessitates eye contact...” would be considered improper when interviewing a female Muslim.

Put together, the above only drives home the point that interviewing is a complex method which can be very rewarding if attention is paid to preparation, thoroughness and culturally sensitive issues. Dilley (2000) also cites two pitfalls which can frustrate interviewers. Firstly, although not lacking in rigour, it would be a misstep to approach the method as an objective, precise, measurable and repeatable endeavour. Secondly, it is crucial not to attempt to pigeonhole the interview into a predetermined format with the aim of validating a hypothesis or theory. This brings me to the next challenge – power relations.

The notion of power is significant in the interview situation, for the interview is not simply a data collection situation but a social and frequently a political situation. Literally the word “inter-view” is a view *between* people, mutually, not the interviewer extracting data, one-way, from the interviewee. Power can reside with interviewer and interviewee (Cohen *et.al*, 2007:151).

The literature is inundated with calls for interviewers to pay attention to the asymmetric nature of power relations between researcher and the researched (Hammersley & Atkinson, 2007; Cohen *et. al*, 2007; Kvale & Brinkman, 2006). Implicit in these admonitions, however, is the assumption that power relations are always, or largely, top-down following a Marxist “repressive hypothesis” paradigm. Much as this study is highly critical of postmodern (Derrida’s deconstructionism is a case in point) denunciation of reality, Foucault’s analysis of power relations is fruitful (Foucault, 1977).

A Foucauldian “knowledge-power” conceptual kit rejects a dichotomization of power relations and asserts that power is productive, polyvalent and more evenly distributed than what conventional wisdom would suggest. In practical terms this would imply that an interviewer ought to be open to and detect the matrix-like imbrications of power embedded in the interview situation. Both interviewer and interviewee are susceptible to the subtlety of this power discourse in ways which may be difficult to discern.

For example, Elwood and Martin (2000:653) state, “Interrogation of microgeographies of interview locations is, therefore, important for triangulation of evidence”. They contend that the choice of the interview site itself is infused with important information with reference to notions of power and positionality. Thus, far from being a top-down repressive set-up, the very choice or fact of location may embody power which may potentially influence the process of the interview and thus subsequent outcome. Applied to my own research scenario, the above would sensitize me to the scales of power inherent in conducting an interview in the Mosque, for instance. A researcher in such a context (Mosque) may feel some pressure to moderate or jettison questions which possibly could offend the sensibilities of the community. The same researcher may have entertained no such qualms in a more neutral setting. Ryan *et al*, (2010:7) mention Muslim peer interviewers who refrained from posing certain questions: “it was apparent that some questions made the peer researchers uncomfortable. This placed limits on what questions they were prepared to ask participants”. Furthermore, another peer researcher had to continually negotiate his positionality because his style of dress placed him as an outsider although he was an insider. The above demonstrates, in line with Foucault (1977), the hydra-headed nature of power in research. The objective is not to expunge this power but to reflexively interrogate its influence which brings me to the subject of reflexivity.

#### **4.4. Reflexivity.**

Kvale & Brinkmann (2009:242) envision a “reflexive objectivity” where the researcher, with a view towards augmenting objectivity, writes about her inevitable biases and presuppositions where appropriate. This study adopts a lens which holds the phenomenological and hermeneutical approaches in fruitful tension: a “bracketing out” of biases as much as reasonably possible while acknowledging the researcher’s own contextual embeddedness. Reflexivity promotes self-awareness of one’s values, attitudes and presuppositions and their potential impact on the phenomena under study. The ethos of reflexivity is summed up in these words:

What this represents is a rejection of the idea that social research is, or can be, carried out in some autonomous realm that is insulated from the wider society and from the biography of the researcher, in such a way that its findings can be unaffected by social processes and personal characteristics (Hammersley & Atkinson, 2007:15).

This calls for the removal of the “mask of nonchalance” (Stern, 2006:110). Ryan et al. (2010) in their research on Muslim communities in North England encountered a number of challenges. They were cognizant of the heightened levels of distrust between Muslims and non-Muslims in the aftermath of 911 which leads them to suggest employing community-based researchers. Nevertheless, they soon discovered this was not a straightforward process that smoothly circumvented the challenge. These “insiders” induced fears of gossip and breach of privacy due to their status as familiar locals whereas, in contrast, the community members volunteered more information to “outsiders”. Ryan et al. (2010) make an important point in challenging those who naively believe that researched groups necessarily categorize “insiders” as “insiders”. In their view, the attribution of “insider” status to community-based researchers can itself run afoul of accusations of homogenizing. They draw attention to the complexity and multilayered meanings attached to such labels. Their study is a call for “insiders” to adopt a reflexive and self-critical lens.

Acquiescing to the demand to remove the mask of nonchalance, I asked the questions, “Am I an insider or outsider?” “How will this bit of reflexivity impact on the subject at hand?” I follow this thread in the next part.

#### **4.4.1. Insider vs. Outsider.**

For Julian Stern (2006), “sincerity” ought to be considered paramount in Religious Education research.

Sincerity is positively expressing what you do think and believe. To refrain from expressing what you think or believe or know to someone, if it is to his advantage or to someone else’s advantage that he should know it, is positive dishonesty. We call it dissimulation – the suppression of the truth (Macmurray (1995) cited in Stern, 2006:106).

In my case, the conspicuousness of my Somali ethnicity is a fact that inevitably is brought up in the company of fellow-Somalis and among many Muslims of diverse ethnicities. Indeed, as Hammersley & Atkinson (2007) note, one’s biography is co-implicated in the social research process. The conflation of religion with ethnicity is a feature *sui generis* in the Somali discourse (perhaps among Saudi Arabians too). The entrenched discourse of “Somaliness” with the underlying tacit assumptions has its advantages and disadvantages. To what degree an automatic

attribution of assumed commonalities or, conversely, misgivings about where my sympathies lie, is a factor outside of the researcher's control. Ultimately, each encounter is unique and unrepeatable. Experience teaches that an open, honest and respectful exchange of views, in line with Gadamer's call to acknowledge bias and prejudice in the quest for knowledge, is the best way forward.

The above (my own ethnicity) can mean that, on the positive side, I am conversant with issues such as the proxemics, kinesics, paralanguage and high/low communication involved in a cultural communication (Sue and Sue, 2003). What is clear is that this puts me in a somewhat ambiguous situation with regards to issues such as power and positionality given at the same time my multicultural background which spans three continents. Much of what I have read in the literature does not address the fact that an increasing number of researchers have bi-national, multinational or cosmopolitan identities which obviously obfuscates the prescriptive accounts on positionality. Such is the ever-increasing pace of globalisation, modernisation and urbanization and the corollary fragmentation of identities that Samuel Huntington dedicates an entire book to the topic – *Who are we? America's great debate* (2004). Positionality is, again, a two-way street. The researcher may assume a certain stance but this may not correspond to that of the researched. Thus far we have seen that labels such as "insider" or "outsider" may not be helpful given the caveats inherent in each designation and so protracted accounts seeking to convince readers of one's competence ought to perhaps be moderated. Whatever Jean-Jacques Rousseau may have felt about his own cosmopolitanism, Edmund Burke thought otherwise. Attacking Rousseau for handing over his five children to an orphanage, Burke referred to him as, "A lover of his kind, but a hater of his kindred" (Appiah, 2006:iv). All a researcher can do is to be as candid as circumstances call for and allow the readers to form their own judgements.

Salutary to the task of grappling with a double-barrelled controversy such as the creation-evolution debate from an Islamic perspective is the need for a philosophical approach that not only addresses issues of ontology and epistemology, but also the perceived strangeness and inconvenience of the "Other". The typological dialogic patterns of Buber (1912) and Levinas' "Face-to face-encounter" with the "Other" lend themselves well to such a task.

#### **4.4.2. Dialogic typologies: An ethical response to the "Other".**

Buber (1958) advocates a holistic worldview (*Weltanschauung*) premised on the primary word pairs "I-It" and "I-Thou" as a typology describing relationships humans enter into. Such dialogic relationships emanate from the ego's attitudinal disposition with reference to persons and things

encountered (Buber, 1958:15). The “I-It” posture adopts a distancing attitude where difference is amplified with a view towards elevating the distinctiveness of the “Self” or “I”. This paradigm is captured in the detached and scheming infatuation with objectification and control over inanimate mundane materials such as “minerals, tables, computers and credit cards but often also extends to parakeets, dogs and *people*” (Diamond, 1974:104). This approach resists genuine engagement but instead adopts a Kantian phenomenal approach with cognitive mental representations that reify the ‘Other’.

Practically applied, Buber’s dialogic philosophy would destabilize an “I-It” approach that pursues knowledge of other religions and cultures from within the cocoon of a stoic and disconnected cognitive stance that is prone to constructing mental representations of other faiths without engaging with them through the lessons and lived experience of adherents. If the *It* is the “eternal chrysalis and the *Thou* the eternal butterfly” (Buber, 1958:32), then the researcher’s task would ideally to provoke the metamorphosis from the *It* to the *Thou* stage. According to Buber, the positivistic approach, fixated with the aim of measuring, analyzing and verifying within a parochially defined regime of knowledge and truth is archetypal of a warped “I-It” relational orientation in Buber’s which is equivalent to a non-relation. Buber decries the excessive infringement of the “I-It” attitude in modernity that has triggered a crisis of genuine appreciation of the “Other” as subject or “Thou”. Buber’s typological dialogue is no doubt susceptible to the charge of idealization but it can serve as a very useful reflexive tool that constantly challenges perceptions of the “Other” and challenges the dialogue to progress from an “I-It” to an “I-Thou” stage. What makes Buber’s position significant is his claim that it isn’t the character of the object, the activity, or philosophy that determines its status as an “It”. The essential dynamic is the *attitude* that the individual exhibits (Buber, 1958:15).

The second and most transcendent model of interaction is the “I-Thou” according to Buber. The choice of the antiquated “Thou” is significant. Some modern-day Christians still prefer the more sublime “Thou” over the diluted and informal “you” and, as a result, insist on using the King James Version (1611) alone. The “Thou”- both in addressing God as the *mysterium tremendum et fascinans*, one’s fellow human and even inert items like works of art – illustrates Buber’s holistic approach to all authentic dialogic relationships. Rather than stoic aloofness, the “I” connects with the “Thou” in a bonding mutual coming together without calculating the potential risks involved. All genuine “I-Thou” relationships will make an effort to approximate the ideal dialogue by engaging one another in the deepest way possible. Buber (1958:89, 90), extols the *I* of Socrates for his endless dialogue with all, Goethe for his dialogue with nature and Jesus for his unconditional relation with the Father.

It is fundamental to keep in mind that Buber's "I-Thou" interaction does not imply a tension-free dialogue of simple concord or consensus. The reciprocity involves the risk of fervent disagreement and divergence but as long as the participants consider each other as "Thou" the relationship perseveres as "I-Thou" (Quinn & Taliaferro, 1997:182,183). The "I-Thou" model in this study does not stipulate the eradication or suspension of the "I" or pupils' religious personal convictions, in this case, but invites them to seriously engage with the theory of evolution. It may emerge that they strongly disagree with the discourse of evolution in education and the society at large but, following Buber, it is hoped that the researcher, by adopting an "I-Thou" lens, creates an atmosphere where a fruitful exchange can transpire. The approach can act as an ideal vehicle to encounter the "strangeness". In this sense, there are parallels with Jackson's (2004) interpretive and reflexive process called "edification" (Jackson, 2004:88) grounded in the word "edifice" or building. The dialogue can serve to challenge participants to re-examine their own assumptions in the light of the unfamiliarity of the encounter. This has the potential to sometimes effectuate significant shifts in attitudes and even beliefs about religious claims (Jackson, 2004:88).

Emmanuel Levinas likewise opined that phenomenologists like Husserl and Heidegger failed to robustly expound on the concept of the "Other". Although infinitely transcendent, the "Other's" face bursts into my world and morally beckons me as an epiphany (Levinas, 1979:194). Acknowledging a gulf that exists in all relations which are generally asymmetrical, Levinas calls for the abandoning of all pre-conceived dichotomous codes and epistemological straightjackets in his famous "face-to face encounter" which compels the "I" to respond ethically to my neighbour for true social dialogue to occur. For Levinas, the "Other's" strangeness - however transcendent and totally peripheral to my ontological apprehension - is shattered in encountering his *Face*. For Levinas (1979:195), language is the interlocutor that challenges any evasion of the "Other" through silence and announces his ethical inviolability.

In the dialogic relation encountering the "Other", Levinas takes stock of the ambivalent emotions that span the gamut from trust to distrust, affiliation and rejection, love and hate, community and war and warns that unless ego is open to the coming of the "Other", and a self-understanding generated by this dissimilar encounter, peace is endangered. The "Self" is rescued from solipsism to "being-for-the-Other". Levinas critiques Buber's "I-Thou" dialogic relationship attacking the informal spiritual reciprocity without a compelling ethical responsibility. The infinity and alterity of the "Other", in his view, is expressed in the face-to-face encounter "whose first word is obligation" (Levinas, 1979:201). Levinas' encounter is undoubtedly superior to relational typologies premised on Rousseau's social contract or any rational justification because the "Other's" inexorable summoning becomes my master.

Researchers, no doubt, would find Levinas' face-to-face encounter with the "Other" fascinating yet challenging. Reflexivity is about preparing oneself for the unfamiliar – even the "strange". The process can reveal deep-seated biases and pre-conceptions which may not have been evident initially. Nipkow (2003) aptly sums up this encounter which resonates with the ethos of research interviewing:

In Levinas' view I cannot simply select the "Other" as I may want to, according to my favourite expectations and preferences. The "Others" happen to meet me or I happen to come across them, very often against my will, hence, I am asked whether I can "stand" the other's strangeness. Nothing other than this "visitation" (Heimsuchung) in the biblical sense of the word characterizes true "plurality" as "difference" that challenges me (Nipkow, 2003:168).

Indeed, it is proximity – such as in the face-to-face interview situation - which creates the inconvenience of the encounter. Levinasian ethics is more far-reaching than the Kantian categorical imperative that declares "Act only according to that maxim whereby you can at the same time will that it become a universal law" because it takes as its point of departure a responsibility to the "Other" prior to consciousness or choice (Levinas, 1979). Again, Nipkow (2003) sums up Levinas' vital input in the field of intercultural education:

Moreover, the whole of moral education and true moral maturity is highlighted if maturity is understood, together with Levinas and other Jewish authors as well as Christian theologians, as a life with responsibility in a plural world (Nipkow, 2003:169).



## CHAPTER FIVE

### 5.0 Introduction

This chapter is the first of four which present the empirical findings from the semi-structured interviews conducted between March and August, 2011. The study explored the creation-evolution debate through the lens of Muslims who have completed their GCSEs in the UK. Most of the interviews were transcribed and analyzed using QSR Nvivo 8 software where the text was coded descriptively, topically and analytically (Richards, 2009:92-114). Where participants (particularly state school teachers) feared traceability, despite assurances of anonymity, notes were taken. This fear of identification will also be highlighted in this chapter. The questions were thematically grouped (see interview guide) into 3 headings: the theory of evolution and education, science and Islam and the theory of evolution and ideology. Although interrelated, each theme will be treated separately in the next 3 three chapters.

In order to situate the debate within the official educational framework, this chapter also considers what the curriculum (key Stage 4) stipulates with regards to the theory of evolution. The contours of the debate since 2000 is cursorily traced showing the gradual expunging of any loopholes in relation to teaching creationism in the curriculum. In light of this gradual tightening of the statutory content, the responses of interviewees are explored in section 5.3.

As a qualitative study, the chief focus is to highlight, not just the numbers which accept or reject the theory of evolution, but the way in which the views are informed by the participants' interpretation of Islam and the Qur'an. Most readers knowledgeable on the subject of the creation-evolution debate must bear in mind that although most Muslims are creationists, it would be erroneous and perhaps Eurocentric to approach the issue with Christian creationism as the default position. For example, it will be quite obvious in the findings that the Christian literalist assumption that the earth is no more than 10,000 years old is non sequitur to the Muslims in the present study (explained in chapter 3.2.3).

In what follows, the education level, ethnicity, gender and occupation of the participants is briefly explored. This will serve as a preliminary introduction with a few comments made comparatively where relevant.

## 5.1. Background of the informants

### 5.1.1 Ethnicity and education

Table 1. Distribution according to ethnicity and education level.

Education level	Interviewees	Somali	Asian	Other-African	Mixed White/Arab
GCSE	3	3			
A-LEVELS	5	4		1	
BACHELOR	13	7	3	2	1
MASTER	3		3		
PHD	1		1		
TOTAL	25	14	7	3	1

Table 5.1 shows the distribution of interviewees according to ethnicity and education level. Although British-Somalis are the main focus of this study and comprise more than half of the interviewees, the views of British-Asian Muslims (7) and 1 Muslim of mixed ethnicity are also studied in order to consider whether the views elicited are uniquely British-Somali or extend across the ethnic divide. Earlier, (chapter 1.2.2) I referred to studies which highlighted the salience of the Islamic faith to the Somali community investigated in the London borough of Camden (Khan & Jones, 2004) and in Canada (Collet, 2007). This study also confirms that Islam is a very important identity marker, not only to the Somalis who participated in this study, but the other participants also. Their interpretation of the Qur'an led them to reject the theory of evolution although, as will be shown later, their understanding of the theory of evolution left much to be desired. The statement below captures the opinions of the majority in this study:

**Interviewer:** *As a Muslim, do you believe that Allah could have employed the agency of evolution to bring about life?*

**Interviewee:** *No, I think that to be honest is stupid. The Qur'an says nothing about evolution but it says something about the Big Bang. It also says something about how Adam and Eve opposed Allah and were quite treacherous. This is how human life came about. There is no account about a single-celled organism which just evolved with monkeys and other life forms culminating in humans. This is really impossible. You can't just put an organism on the ground and just see humans come out of it billions of years later. I think that is stupid, and it is not in the Qur'an certainly (male, A-levels).*

These interviewees had completed their GCSEs in the UK. The candidates were recruited through imams in Mosques and other officials affiliated in some way to the Mosques. 17 of the 25 candidates were degree holders, with 13 undergraduates. Although the 4 candidates holding a postgraduate degree were British-Asian, half of the undergraduates were British-Somalis.

Although this small study can in no way claim to make generalizations of any sort, the fact that most of the interviewees are highly educated (all degrees have been obtained in the UK) adds a significant element to this study. It would be plausible to assume that the additional years in University perhaps may have had an ameliorating effect on the interviewees' hostility towards the theory of evolution. Prolonged exposure to liberal Western education with a corollary secular socialization tends to impact directly upon tolerance. Some explain this cognitive sophistication in terms of a gradual exorcism of all things threatening and superstitious.

According to one study, education reduces church attendance, dogmatism, and belief in the devil, and, in so doing, increases tolerance (Gibson & Tedin, 1988)... People with high ambiguity tolerance, which, like other forms of tolerance, is promoted by advanced education, are better able to handle the stress of real or imagined dangers without sacrificing their rationality (Vogt, 1997:141).

The above postulation can be summed up as follows:

Education  $\implies$  Cognitive Sophistication  $\implies$  Secularism  $\implies$  Tolerance

Significantly, only 1 interviewee out of the 25 interviewed expressed views supporting the theory of evolution in its *entirety*. I emphasize the word *entirety* because a few of the interviewees did attempt to strike a more conciliatory tone by accepting aspects of the theory of evolution (for example variation within a species) as long as it did not pertain to human shared ancestry with apes. Obviously, this is a negation of the theory of evolution as the theory states that all living organisms (including humans) have descended from one common ancestor. Every stage of the process is indispensable to the whole. This misunderstanding of the theory of evolution arises because creationists often distinguish between two forms of evolution: microevolution and macroevolution which will be explored later.

Nevertheless, the fact that 24 highly educated Muslims (many are school teachers) flatly reject the theory of evolution is significant. It appears that higher education has made little or no impact on the religious convictions crystallized through the influence of the home and Mosque. This raises questions about the apparent resilience of Muslims to the scientifically accepted teaching of evolution. One of the interviewees – a science teacher – explained how he taught the theory of evolution in a London school through a process of compartmentalization in which he invested no

emotions, enthusiasm or commitment to the lesson. The interviewee felt that this enabled him to stay faithful to the dictates of Islam without falling foul of the academic responsibilities he had to the students. Comments like the one below were typical:

*Evolution is a topic that has many flaws because of scientific evidence in the Qur'an that refutes this. There is no evidence in any religious books namely the Qur'an, Bible and Torah to suggest that this ever existed in the first place. In fact all three books in some way mention the creation of the earth being done in 7 days by The Almighty and does not go any further into any detail. I find it very difficult to believe that scientists that exist in the 21<sup>st</sup> Century lived to tell us stories that existed millions of years ago - or so they say (Male, English teacher).*

In a similar vein, none of the participants were willing to countenance any suggestion that modern science has discovered knowledge which contradicts scientific statements in the Qur'an:

*My basic belief is that anything that is proved as a scientific fact will never contradict the Qur'an because I do believe that the Qur'an is the literal word of God. As such, I have no fears or worries in that arena... I actually believe that the more of the universe we humans understand, the more we will understand the Qur'an. Many interpreters of the Qur'an – mufasir – struggled to understand a verse where Allah swears by “where the stars were” but scientists now understand that the light that we see from the stars is light which has been travelling for millions of years to get to us today... Such examples lead me and other Muslims to be confident that the Qur'an is divinely inspired (Male, A-levels).*

As will be demonstrated from the responses of the interviewees, ethnicity and education level seemed to matter little with regards to their denunciation of the theory of evolution. On the contrary, the responses as a whole show a remarkable degree of homogeneity and uniformity, despite differences in ethnicity and education. The next section looks at gender and education.

### 5.1.2 Gender and education

**Table 2. Gender participation and educational level**

Education Level	Somali		Asian		Other- African		Mixed White/Arab	
	Male	Female	Male	Female	Male	Female	Male	Female
GCSE	1	2						
A-levels	2	2			1			
Bachelor	5	2	1	2	1	1	1	
Master			3					
PhD			1					
Total	8	6	5	2	2	1	1	

9 out of the 25 interviewees are females (chapter 4.0 discusses the challenges of recruiting female participants). Many of the participants were open and curious about the research topic. Additionally, some thanked me for drawing their attention to this controversial topic and felt that they needed to update their knowledge on the creation evolution debate blaming the schools for their inadequate knowledge of this topic. The respondent below also critiques those who she believes misuses the theory of evolution for racial purposes.

*There is this bureaucracy...I think as far as I can remember schools taught about evolution with the objective of students just passing the exam rather than a life lesson. Especially in this country, it was not about learning about where we came from but an exercise in passing the exam. Actually this has highlighted my ignorance when it comes to the theory of evolution. It has made me want to research and understand more. Also I have been made angrier to think that some actually misuse this to believe they have an inherited superiority (female, A-levels).*

As mentioned earlier, there was little to tell the responses of females apart from males. The scepticism and rejection of the theory of evolution was spelled out unequivocally.

**Interviewer:** *Do you support or oppose the teaching of evolution as scientific fact in school? Why or why not?*

**Interviewee:** *Do you really want to hear my opinion? You are going to be transcribing this, aren't you? But they will not know who I am so here is my opinion: they really shouldn't be teaching evolution. That's the truth. Neither should evolution be taught in the science classroom or in any other classroom. Just stick to this (female, undergraduate).*

Perhaps one reason for the uniformity, despite differences in gender and educational attainments, is the Muslim concept of *ummah*. Many of the respondents would often defer to this idea of a single religious family of Muslims across countries, cultures and languages – a kind of transcendental religious community (Bowker, 1995:15). They often spoke as if very conscious of the presence of the invisible community and, where uncertain, would ask me to consult an imam rather than volunteer their autonomous opinion. When, for instance, I asked one female whether it was possible to reconcile the dictates of *tawhid* (oneness of God) with Western separation between church and state, her response evinces a privileging of the *ummah*:

*Clearly, there are some challenges. Growing up in the UK, and sharing a common social space with atheists, for example, a Muslim cannot say "Inshaallah" or "May God bless you" because they don't believe in such utterances. It is true to say that a practising Muslim is most liable to fulfil the requirements of tawhid in a Muslim country and not a Christian or secular one. This may come across as narrow-minded but our religion actually commands us to live in a Muslim country precisely for such reasons as the principle of tawhid.*

*When I travelled to Somalia and Dubai, for instance, I was constantly reminded of the salat (prayer time) as the adhan (call to prayer) was made. This definitely facilitates tawhid whereas, in the West, there are many distractions and obstacles to raising children as Muslims. The British are the majority here and if they say something hostile about Islam there isn't much we can do about it (female, A-levels).*

The tension palpable in the statement above serves to remind one of Lewis' (2007:6) arguments that traditional Islamic jurisprudence did not envisage minority Muslim communities living in non-Muslim countries. Barring the brief interlude of colonialism, Muslims generally were accustomed to having a monopoly on power. The all-pervasive nature of the Islamic faith is understood to be best fulfilled in a community of like-minded adherents. One can easily understand this proposition given the demanding practice of fasting during Ramadan, for instance, and the commandment to pray five times daily. Clearly, observance of these pillars of Islam in a secular and often hostile Western milieu can be difficult.

Where appropriate, the views of the 3 imams will be considered together. The first section of this chapter is not meant to be exhaustive but present the background of the interviewees and briefly comment on a few differences where relevant.

### 5.1.3. Imams and lay members.

**Table 3. Distribution according to ethnicity & occupation.**

Occupation	Somali	Asian	Other-African	Mixed White/Arab
Teacher (secondary school)	1	4	2	1
Lecturer (university)		1 (also Imam)		
Student	5	1		
Transport sector	2			
Health sector	1			
Imam (full-time)		1 (also PhD student)	1	
Unemployed	5			
<b>Total</b>	<b>14</b>	<b>7</b>	<b>3</b>	<b>1</b>

11 of the 25 interviewees were teachers. Of these 9 were engaged in various capacities as teachers in public/private schools. One was a lecturer employed on a full-time basis at a University. The other 2 imams, although employed to teach in Mosques alone, also wielded influence through the *madrassa* (schools or classes conducted after school and the weekends to promote Qur'an-based learning and Arabic). One student had this to say, for example:

**Interviewer:** *You attend a madrassa in the evenings after school. What have they taught you about the issue of creation-evolution?*

**Interviewee:** *I attend a Muslim school (madrassa) where we learn about the origin of the universe like how Allah created the universe through suras or verses in the Qur'an. We haven't come so far as to learn about what the Qur'an says about evolution, but I am sure we will soon. The suras we learn teach about how the sun, the moon and the earth were created. We learn about how Allah controls the sun and the time the sun and moon come out to regulate the salahs or prayer times like fajr which is the first prayer said at dawn (male, A-levels student).*

The imams, as can be expected, referred often to Qur'anic verses which they quoted first in Arabic and then in English. The views of the lay members, generally speaking, coincided with those of the imams and teachers. There was one anomaly, however. Whereas two of the three imams stated that humans could not have shared a common ancestry with apes because Allah had transformed some rebellious Jews (in the days of Moses) into apes and pigs, none of the remaining 23 candidates even alluded to this:

**Interviewer:** *As a Muslim, do you believe that Allah could have employed the agency of evolution to bring about life?*

**Imam 1:** *It depends on the organism, but not a monkey. From a religious point of view, God has condemned some humans to apes through transmutation. So if that is a species that God is using to transmute people to, how could he use that as the origin of everything? It sounds absurd even from a purely logical point of view. There is no textual proof for Muslims to look at the Qur'an and say, 'This is what came first.' Everything living was created from water.*

Initially, I didn't know what to make of this statement given the explicitly racist overtones. I reasoned that this was a one-off extreme view and decided not to pursue this any further. However, a few days later, when the same statement was made by another imam (there was absolutely nothing in the interview question that invited it), I decided to follow it up.

**Interviewer:** *Could Allah have employed the mechanism of evolution to spawn life?*

**Imam 2:** *I don't want to engage in hypothetical constructs on an issue where the Qur'an is quite clear. We have no support for such a speculation in the Qur'an. To attempt at a guess would only be fruitless. Having said this, I will add that Allah did transform some Jews in to*

*pigs and apes. This does not mean they evolved into pigs and apes but this happened instantly.*

**Interviewer:** *Some would say this is quite racist.*

**Imam 2:** *Well, the Qur'an was not written to cater to the political correctness of modern people.*

This verse can be found in the Qur'an which the imams pointed me to:

*And you know well the story of those among you who broke Sabbath. We said to them: "Be apes—despised and hated by all" (Qur'an 2:65). Thus We made their end a warning to the people of their time and succeeding generation, and an admonition for God-fearing people. (Qur'an 2:65; Maududi).*

This imam opined that the transmutation of the disobedient Jews was a reversal of the created order serving as a punitive measure. To his mind, such a drastic action was nevertheless instantaneous and did not involve millions of years as the theory of evolution requires. Later I did call around to some of the other interviewees to flesh out their understanding of what the imams said. I was able to speak to 7 individuals. 5 of them acknowledged this verse and the interpretation given by the imams. 2 stated that it was metaphorical. Obviously, if many more Muslims like these well-educated imams (one was a PhD student at a top University) subscribe to a literal interpretation of these verses in the Qur'an, this would further prejudice their minds against the theory of evolution. I say further because they already take literally the Qur'anic narrative about the creation of Adam and Eve *ex nihilo* from the dust, to which we might have to add the implications of some apes being cursed humans. The aversion to the theory of evolution would be amplified.

Taken literally, Sura 2:65, 66 cited above, would imply that through this act of divine punishment, Allah expects Muslims to perceive apes as an inferior – even contemptible – species. If true, (more research would be required) then a case can be made for shifting the locus of the discussion to such literalist interpretations of the Qur'an. Obviously, those in the camp of evolution would question the underlying ideology which enthrones humans at the apex of all living creatures. The monotheistic faiths traditionally operate under a framework where existence follows a Great Chain of Being paradigm with God on the throne, followed by a hierarchy of angels, humans, animals and inanimate objects. A common objection is encapsulated in the objection that follows:

Despite the Great Chain of Being's traditional ranking of humans between animals and angels, there is no evolutionary justification for the common assumption that evolution is somehow "aimed" at humans, or that humans are "evolution's last word" (Dawkins, 2009:158).



Keep in mind that these two imams were born and bred in the UK. As the table below shows, one had completed a Masters degree. He was currently studying for his PhD whereas the other had completed A-levels and graduated with a degree in theology and various diplomas in similar fields from Saudi Arabia. Articulate and well-versed in the theory of evolution, they nevertheless rejected it. The above aligns with Harrison's (2007:319) observation that fundamentalism marginalizes the role of reason in appraising religious belief and espouses an outlook that accommodates science only in so far as it does not contravene religious belief.

**Table 4. Imams and lay members.**

Education level	Imams	Lay members
GCSE		3
A-levels	1	4
Bachelor		13
Master	1	2
PhD	1	
Total	3	22

The third imam was a university lecturer. He was the only participant in the entire research who held views in support of the theory of evolution. As a theistic evolutionist, he believed the Qur'an could be harmonized with the theory of evolution.

*I'll tell you the fear – the fear of Muslims that if they believe in evolution that would disprove the Qur'an or disprove Islam, and they would find themselves agreeing with the likes of Dawkins. But biologists agree that evolution is beyond a theory – it is a fact. There is enough evidence to corroborate or support the theory. It is considered to be the most proved scientific theory ever (imam 3, lecturer).*

When asked about his views with regards to Allah transmutating some Jews into apes and pigs, this was his response:

*I once heard one Imam repeatedly refer to Jews as “apes” and “pigs” which is such a racist thing to do. There are some Qur'anic verses that make such reference but not to the Jews as a whole, but a subset of the Israeli population who failed to keep the Sabbath. Anyway, this is a metaphorical statement and not to be taken literally. No doubt such statements, due to a defective hermeneutics, have had a negative impact on the psyche of many Muslims who see this as a punitive measure (imam 3, lecturer).*

This imam and academic admitted that the debate had not yet begun among Muslims due to the fear of censure and marginalization that would follow. He nevertheless believed that an increasing

number of Muslim scientists had embraced the theory of evolution as incontrovertible fact but were afraid to go public with this conviction. Interestingly, this imam emphasized that many Muslim scholars of the “Golden Age” expressed views adumbrating the theory of evolution which sits uneasily with many modern-day scholars.

*It is true that these Muslim scholars were ahead of their time adumbrating the theory of evolution by centuries. Yes, they did not feel that rationalism was a threat to their faith but flourished because they believed their faith actually spurred them on to new inventions and discoveries. Al-Jahiz, Ibn Khaldun and other medieval scholars clearly were propounding an early version of the theory of evolution which led John William Draper to say the theory of evolution was actually the Mohammedan theory of evolution. Harun Yahya has no scientific credibility. He is just a populist in the same league as Zaki Naik (imam 3, lecturer).*

This imam’s statements align with the opinions of Masood (2009) and Shanavas (2005) as discussed in chapter 2.2.1. Of note is al-Jahiz (9<sup>th</sup> century AD) who wrote: “Environmental factors influence organisms to develop new characteristics to ensure survival, thus transforming into new species. Animals that survive to breed can pass on their successful characteristics to their offspring” (Masood, 2009:183,184). Of significance is the manner in which both camps – the mainstream Muslim “evolution-deniers” (to borrow from Dawkins) and the more progressive imam 3 - seek to invoke the *ummah* (past and present) in support of their views. In this sense, one is reminded of critical realism’s casting of the world in terms of a stratified realm where various mechanisms function in an emergent fashion without being reduced to the source of origin. New combinations emerge through this cross-pollination (Bhaskar & Lawson, 1998). Once again, we encounter the perennial question of the structure/agency nexus as a framing device so central to social science (Scott, 2005). Bhaskar is concerned to underscore the manner in which intentional agency is influenced by social structures. Human acts such as *saying*, *making* and *doing* do not occur in a vacuum but as typical modalities secreted by the influence of social structures (Bhaskar, 1998). Thus, even imam 3, who conceded that his views were considered anomalous when seen through the lens of the Muslim majority, did not seek to legitimize his views on science alone, but sought refuge in the opinions of respected medieval Muslim scholars like al-Jahiz and Ibn Khaldun.

As mentioned briefly in the introduction, a number of interviewees – mostly those with higher education and professional jobs – evinced some consternation before the interviews. I feel this issue warrants a brief discussion because it says something about the conflicted nature of some Muslims who struggle to strike a balance between their religious beliefs and their professional roles in a secular society like Britain.

#### 5.1.4. A conflict of loyalties?

*Do you really want to hear my opinion? You are going to be transcribing this, aren't you? But they will not know who I am so here is my opinion: they really shouldn't be teaching evolution. That's the truth. Neither should evolution be taught in the science classroom or in any other classroom. Just stick to this (female, 42 years old).*

In the archetypal public imagination, at least in the West, the media discourse would have conjured up the image of a poorly educated Muslim woman probably wearing a *burkha*. Actually, this interviewee was trained as a journalist, didn't even wear a *hijab*, and would have been considered a very liberal Muslim by other Muslims. Her statement above appears to be incongruous with the statements she made prior to that. In fact, it can only be described as a volte face.

**Interviewer:** *Should the teaching of evolution and creationism be given equal time in the science classroom?*

**Interviewee:** *I actually didn't know there was a big debate going on about this. To me actually evolution is scientific, and so should stay in the science department, but they should equally teach religion which should be confined to the religious department. For example, the creation of Adam and Eve is a religious...it is theology...and so should be confined to the religious arena. When you think of science, you think of the laboratory but religion is different (Ibid).*

This was not untypical. Initially, some were very cautious unsure of my motives or who I really worked for. Spurred on by the cloak of anonymity, they gradually dropped their guards and candidly divulged their opinions. In relation to other interviewees, the fear of identification took the form of repeated requests for anonymity, requests to turn off the recording device. Another Muslim teacher who shared his views at length suddenly looked anxious and asked me if I could delete the audio recording and rely on notes. This was after he had signed the letter of consent where he gave his assent to audio recording. I promptly agreed to do so, after which he regained his air of confidence. When I called a science teacher who declared the theory of evolution was pseudo-science - although he taught it as a scientific fact in school – I was told not to call him again, and refrain from giving any of his details to anyone. My intention was to send him a transcription of the interview for him to review. As section 5.3.4 demonstrates, the majority of state school teachers were the most hostile to the theory of evolution.

The question which this cursory discussion throws up is: why is it that, despite success measured in terms of education and employment, and precious little by way of anti-evolution arguments, these interviewees held such implacable views? The inner turmoil they experienced in this tug of war between Caesar and God, or the Qur'an and Darwin, was palpable. Here the section on *clash of*

*trajectories* in chapter 1.3.2 is salient. Al-Banna, one of the founders of political Islam, accused Western schools in Egypt of a Machiavellian agenda aimed at weakening the integrity of Islam. The responses of the teachers, and the incongruity with the trappings of success in the West, suggests the answers are to be found in the historical distrust of the modernist project which they feel is geared towards destroying religion as a viable force and promoting the supremacy of the West. This historical distrust is evident in the quote below:

*The biggest problem I have with the theory of evolution is that it has all these spaced out dots and they try to connect it like the intermediary fossils. Is it racist? I think looking throughout history, even before Hitler, German philosophers during the Enlightenment especially were big on that. There was this upsurge in the 19<sup>th</sup> century with Nietzsche and stuff where they were massively into the theory of evolution (female, Masters student).*

To borrow from Esposito & Mogahed (2007:42), these Muslims fear a “Westoxification” of their Islamic identity. The theory of evolution is seen as one of the main pillars in this perceived “Westoxification”. The imam who was the only one of the 25 candidates who championed the theory of evolution verbalised the source of this Muslim fear of evolution.

*I'll tell you the fear – the fear of Muslims that if they believe in evolution that would disprove the Qur'an or disprove Islam and they would find themselves agreeing with the likes of Dawkins (imam 3).*

Before delving into the findings in the next chapter, it is germane to the task of assessing responses from the interviewees to have some acquaintance with the statutory contents and guidelines with regards to the teaching of the theory of evolution in schools funded by the public purse. In the next section, the spotlight is put on statutory documents such as the National Curriculum for science in Key Stage 4. Particular attention is given to the contentions arising from diverging interpretations of the curriculum phraseology in relation to the teaching of the theory of evolution.

## **5.2. Documents shaping the debate**

### **5.2.1 The Science National Curriculum Key Stage 4 (2000-2006)**

A few phrases in the National Curriculum for science in Key Stage 4 (2000) revolving around the teaching of the theory of evolution in schools in England stirred up much heated debate in the course of the last decade or so. On the one hand, adherents of creationism in schools capitalized on this equivocation to “teach the controversy” while on the other hand, some – appalled by this misuse – galvanized scientists and educators (including clergymen and lay Christians) to lobby the

government to retract the unfortunate phraseology. A look at the statement below elucidates the contention:

Students should be taught...how scientific controversies can arise from different ways of interpreting empirical evidence [for example, Darwin's theory of evolution] (Science in the National Curriculum, Qualifications and Curriculum Authority, 2000, Key Stage 4, 1b).

The crux of the problem was the mention of "scientific controversies" in the same breath as "Darwin's theory of evolution". This sentence was seized upon by creationists to imply that the theory of evolution was (a) controversial and (b) creationism qualifies as an example of "different ways of interpreting empirical evidence". Obviously, one can interpret the statement to mean that the fossil record is the empirical evidence supporting Darwin's theory of evolution, while Lamarckian evolution is an example of a scientific controversy. Nevertheless, there is no doubt that the lack of clarity led to much obfuscation leading some in the evolution camp to hunt for the "creationist mole" in the ranks of the architects responsible for this phraseology.

So far the BCSE has found two instances in the National Curriculum where fundamentalists seem to have opened the door for teaching creationism in science lessons in the UK. There appears to be a mole in the system pushing the fundamentalist religious agenda onto the National Curriculum (British Centre for Science Education, 2007).

There are a plethora of examples of creationists claiming that the 2000 Key Stage 4 science curriculum formulation granted them some latitude in interrogating the unassailable hegemony of the theory of evolution in science. Commenting on the controversial phrase in the curriculum, a former science teacher in state schools, Paul Taylor, a creationist, writes in the creationist website *Answers in Genesis*, "The first statement enabled evolution to be taught critically. Pupils were invited and encouraged to question the 'facts' they were being given" (Taylor, 2008). Such was the furore generated by similar interpretations of the phrase that 43 scientists and associates of the British Humanist Association and the Humanist Philosophers' Group wrote a letter which was sent to then Prime Minister, Tony Blair, and other relevant officials in 2002. An extract follows:

We are alarmed to learn that creationists are now teaching in at least one state-funded school, Emmanuel College in Gateshead, that the Darwinian evolutionary hypothesis is "a matter of faith" (TES, 25/1/02, Guardian 9/3/02, Channel 4 News 11/3/02). Creationist science teachers appear to be exploiting the wording of KS4 Science in the National Curriculum, which refers to pupils learning "how scientific controversies can arise from different ways of interpreting empirical evidence [for example Darwin's theory of evolution]" (Marley, 2011).

The signatories urged the government and GCSE examination boards to uphold the teaching of the theory of evolution as science and, conversely, ensure that creationism is not elevated to the

position of a scientific hypothesis. Additionally, they called for the theory of evolution to be taught at Key Stage 2 (*Ibid*). The pressure exerted by members of the British Humanist Association, among others, saw a tightening up of the phraseology in the National Curriculum. The earlier statement about “scientific controversies” and “Darwin’s theory of evolution” was replaced by an instruction in the revised National Curriculum (2006).

In their study of science, the following should be covered: . . . variation within species can lead to evolutionary changes and similarities and differences between species can be measured and classified (Science in the National Curriculum, Qualifications and Curriculum Authority, 2006, Key Stage 4, 5b).

Exam syllabuses designed on the basis of the new National Curriculum continued to plug any loopholes by focusing more on the theory of evolution.

Explain the main steps in Darwin’s theory of natural selection leading to the evolution or extinction of organisms:

- presence of natural variation;
- competition for limited resources;
- “survival of the fittest”
- inheritance of “successful” adaptations;
- extinction of species unable to compete.

(GCSE Gateway Science, Syllabus B, OCR, 2006:69)

### **5.2.2 The Science National Curriculum Key Stage 4 (2006-2011)**

Andrew Copson, prematurely celebrated the inclusion of the theory of evolution in the National Curriculum for primary schools (Copson, 2009). He reasoned that introducing the theory of evolution at Key Stage 2 would counter the “natural cognitive biases – such as our human propensity to look for design and purpose – that hinder the acceptance of evolution” (Copson, 2009). A second reason, he argues, is to redress the bias engendered by infiltration of creationist messages in popular culture.

In July, 2009, a number of eminent scientists with the British Humanist Association (BHA) once again lobbied the Labour government to include the teaching of the theory of evolution at the primary school level. An extract of the letter sent to Ed Balls, Secretary of State for Children, Schools and Families is reproduced below:

We find it extraordinary that evolution and natural selection find no place in the section “Science– life and living things” (page 6). The theory of evolution is one of the most important ideas underlying biological science. It is a key concept that children should be introduced to at an early stage so as to ensure a firmer scientific understanding when they study it in more detail later on. The wealth of new resources on evolution available for

children of primary school age clearly demonstrates their ability to grasp its central concepts. We consider its inclusion vital (BHA, 2009).

In April, 2011, a creation-scientist, Philip Bell, was invited to speak in St Peter's Church of England School, Exeter, which receives state support. Bell is an evangelist employed full-time with the creationist institution, Creation Ministries International (Brateman, 2011). A mother, Laura Horner, a practising Christian, complained that Bell was allowed to present his views as scientific facts. Significantly, all this transpired in a religious education class, but Horner, a trained geologist, argued that Bell should not have presented his views as science, albeit in a religious education class. Horner founded a lobby group – CriSIS (Creationism in Schools Isn't Science) petitions were signed and sent to the secretary of state for education, Michael Gove, who has gone on record saying that creationism and intelligent design are not science and should not be taught in schools.

A Department for Education spokesman said Mr Gove had been “crystal clear” that teaching creationism as scientific fact was “wrong”. He will not accept any academy or free school proposal which plans to teach creationism in the science curriculum or as an alternative to accepted scientific theories (Marley, 2011).

The current government has legislated for free schools to be set up by September 2012. This includes schools for 16-19 year olds, children with special educational needs and pupil referral units. Under the new guidelines, though, drawn up by the coalition government, permission will be denied to stakeholders agitating for creationism and intelligent design. The teachers' networking website, TES (2011) reports:

...the Everyday Champions Church in Newark submitted plans to the Department for Education to open a secondary school with creationism as part of its science curriculum. But in guidelines published this week, the Government has ruled out such groups being able to set-up free schools. “Creationism, intelligent design and similar ideas must not be taught as valid scientific theories,” according to the criteria to assess the suitability of applications (TES, 2011).

In the most recent twist, the government ratified measures which will make it very difficult for free schools to teach creationism. “Under the new agreement, funding will be withdrawn for any free school that teaches what it claims are ‘evidence-based views or theories’ that run ‘contrary to established scientific and/or historical evidence and explanations’” (Doward, 2012).

In summary, the picture one is left with is one in which creationists have been soundly defeated and relegated to the periphery of the educational landscape, but seem to work indefatigably behind the scenes to reinstate creationism. In what follows, I will look at some of the responses from my interviewees with regards to the national debate outlined thus far.

### 5.3. Evolution & participants' views on home-schooling

In light of the mandatory teaching of the theory of evolution, coupled with the expunging of creationism from the science curriculum, I asked participants whether they perhaps would opt for alternative forms of schooling such as home-schooling if given the opportunity. The question asked was:

*Some creationists in the USA have opted for alternative forms of schooling (e.g. Christian schools or home-schooling) in protest against evolution, among others. Given the opportunity, would you have opted for similar alternatives (e.g. Muslim faith school) in the UK?*

Considering the views of the lay members alone, the majority (15 of 22 interviewees - excluding the 3 imams) responded that they would not opt for home-schooling or Muslim faith schools in protest against the teaching of the theory of evolution, if such an avenue was open to them. This must be seen in light of the discrepancy that 24 out of 25 of the interviewees rejected the theory of evolution outright as a scientific theory. In other words, rejection of the theory of evolution did not translate automatically into a vote of no-confidence for participation in state schools. There was one aberration, however. Among those who would opt for home-schooling, all except one was a teacher. The fact that six of the seven interviewees who would opt for home-schooling or Muslim faith schools were all qualified teachers employed by the state is explored further in section 5.3.4.

I will look more closely at some of the typical responses from all the interviewees. These can be grouped under 4 broad headings:

- Exposure to evolution will develop critical thinking
- All citizens must have the same education;
- No choice but to conform to UK standards
- Those who reject state schools and opt for faith schools.

#### 5.3.1 Exposure to evolution will develop critical thinking

Those who featured in this category stated that, although they rejected the theory of evolution, they felt that protectionism was not the way forward for Muslim children in the UK. In fact, some were highly critical of the *madrassa* model of education which curtailed critical thinking, in their opinion. Their statements indicated a high degree of respect for the state schools accompanied by strong reluctance to even consider sending their children to alternative schools to shield them from the theory of evolution.



*If I home-school, this would deprive my children of the opportunity of learning important interpersonal skills vital for succeeding in this complex world. I think I would leave my children in public schools and guide them carefully along so that, while they pick up these skills, they are also mindful of their religion and culture (male, 20 years old).*

*No I wouldn't to be honest because that could damage a child more, especially if they are home-schooled. I myself did not go to a faith school and I believe it is important to be exposed to these sorts of things. Even in Islam you are supposed to pose a question in order to get an answer. If you are not exposed to controversy at school neither will you be exposed to it at school, and guaranteed 30 years down the road, someone will ask you about evolution. Foundation and knowledge is vital (female, 24 years old).*

It appears that these interviewees, who themselves reaped the benefits of studying in the UK, did not want to deny this privilege to their children. The second respondent expresses doubt in the ability of the home to provide knowledge about subjects of a controversial nature. In reviewing the responses, it is clear that the majority were not calling for a blanket ban of the theory of evolution, but for creationism to be incorporated into the curriculum. One interviewee stated, "I would want my children to know about the evolution theory but I want them to know about creationism as well. I personally do believe in creationism because of my understanding of how the world was created" (male, 25 years old). What is evident, however, is that the respondents did not put much thought into the brand of creationism which should be taught in schools, or the fact that creationism is not science. Some saw the benefits of a secular education in practical terms like the interviewee below for whom career was vital.

*I would say definitely no. I would choose not to go to a religiously dominant school of one faith or the other. I think going to a religious school would lead me to become culturally close-minded. I would have never dared to think outside the box. I would have never dared to go to University outside of London. I would have never dared to do the course I wanted to do because I would be too scared to leave my environment. So career-wise, I wouldn't have liked it (male, 25 years old).*

### **5.3.2 All citizens must have the same education**

The majority of responses in favour of state schools appear to be motivated by concerns for egalitarianism rather than the preservation of the integrity of the theory of evolution. There was some fear that choosing Muslim faith schools or home-schooling would further exacerbate the balkanization of education in the UK.

*No, I do not agree with these creationists because this would carve up the educational landscape. Some would go to a Muslim school and others to a normal school etc. This would give rise to discrimination and conflict. In my school, pupils can choose whether they*

*want to do religious studies or not after getting consent from the parents. Rather than have alternative schools, pupils should also be allowed to choose whether they want to study about evolution or not (male, 18 years old).*

One interviewee's response demonstrated his confidence in the resilient nature of Islamic belief as a bulwark against the theory of evolution. His response draws attention, once again, to the manner in which many Muslims take refuge in the transcendent Muslim faith community – *ummah*.

*I would still choose to send my children to a public school. I think it is too drastic a step to send my children to a private Muslim school or home-school to shield them from the theory of evolution. There are over 20 million Muslims in Europe today; I doubt that any of them have become evolutionists after having been exposed to the public schools which teach the theory of evolution. I would ensure my children understand evolution to be an ideology motivated by atheism (male, 32 years old).*

One female, doing her Master's degree in religious studies, criticised what in her opinion was tantamount to double standards: "Since Muslims lobbying for Muslim schools by definition reject state schools, why are they concerned to lobby the government to ban the theory of evolution?" She expressed the view that education must be fair for all irrespective of cultural, religious and ideological differences.

What the responses thus far seem to indicate is that there appears to be a conflation of academic interest between interviewees in this category and stakeholders in the educational system in Britain. By this I mean the two parties evince a consensus to the effect that sharing a common public educational space is vital in moulding a shared identity and citizenship in the UK. This shared public educational space is the state schools with the contents hammered out in the National Curriculum. The above responses are commensurate with Robert Jackson's observation that:

*...there are plenty of individuals, families and groups practising religion who do not favour separate education for children. Some of these see real dangers in separate schooling, and wish their children to learn with others from a range of backgrounds in the Community school (Jackson, 2004:137).*

Equally, the interviews indicate that, while there is academic conflation of interests with the wider society, the same cannot be said with regards to the issue of values. Some interviewees, for example, felt that the widespread belief in the theory of evolution was just one more in a long list of decadent beliefs and practices in the West. They reasoned that there were much worse issues to be tackled than the theory of evolution. Asked whether he would consider faith schools as an alternative to state schools because of the theory of evolution, one Muslim teacher said:

*Absolutely, but for different reasons. I believe there are several societal ills that take root in schools; like drugs, teenage pregnancy, violence, pornography. All of these have a more detrimental affect than ideas like evolution, at least at the high school level. So I would choose Muslim faith schools for the general atmosphere it offers. As for evolution, like I said, it hasn't been taught explicitly in schools (teacher, 31 years old).*

### **5.3.3. No choice but to conform to UK standards**

This category brought together those who seemed resigned to accept that there is no use in fighting the majority. It was more an attitude of “when in Rome do as the Romans” rather than a process of cognitive dissonance inducing them to look favourably at state schools.

*At the end of the day this is not a Muslim country, and so I have to respect their opinion and abide by their laws. This does not mean that I support the teaching of evolution in schools. It is more like I have to tolerate such misguided policies because I am an individual whose parents happened to choose the UK to live in. As immigrants we cannot just demand a complete overhaul of policies and curricula which is at odds with our beliefs, however detestable they may be (female, 26 years old).*

This was the same individual who maintained that her religion forbade her to reside in a non-Muslim country. Although a British citizen, she spoke in terms of “immigrants” divesting herself of any power or responsibility to engage in a democratic manner with issues of policy and curriculum. One imam also regretted the fact that the state controlled education:

*Here in the UK and Europe, the State controls education. Children are not given the option of choosing whether they wish to study evolution or not. Homeschooling is really the best option for Muslim children. Muslim parents and other stakeholders must have enough knowledge to rebut the information taught in school about the theory of evolution (imam 2).*

Curiously, the voices of British Muslims in the creation-evolution debate seem to be negligible – even non-existent in the public arena. As the earlier discussion revolving around creationism has shown, it is mostly Christian creationists with an eccentric and parochial take on the first few chapters of the book of Genesis who dominate. Clearly, the growing population of Muslims cannot be content with this status quo. If the creationists manage to win a most unlikely victory, and the textbooks feature Henry Morris’ brand of creationism (the chances being infinitesimally small), Muslims will find themselves having to reject the Big Bang theory and all radiometric dating which confirm an old age for the earth – scientific facts commensurate with Muslim beliefs. On the other hand, they will have to reject the Qur’anic version of a local flood around the Caspian Sea, and embrace the biblical worldwide Noahic deluge as the touchstone explanation for the fossil record. Needless to say, Muslims would not subscribe to this version of creationism. Given these weighty reasons, their silence in the public forum is puzzling.

#### **5.3.4. Those who opted for Muslim schools**

As mentioned earlier, a rather curious fact was that 6 out of the 7 who were opposed to state schooling for their children were qualified teachers. These teachers were also among those who took objection to their voices being recorded. Their answers were often short, curt and unequivocal. One of them retorted “If I was given the option, I would remove my children and place them into alternative methods of schooling” (male, teacher). Another male teacher replied, “I would definitely enrol myself or my children in a Muslim faith school in the UK as opposed to a secularist school”.

Another teacher, who was currently single, and speaking about a hypothetical scenario where she would have to decide about where to send her children said, “I personally would object to it [evolution] being taught as a fact, and, if necessary would not send my child to that school” (female teacher). This teacher has since found a job teaching English in Saudi Arabia. Another female teacher based her decision on the perceived irreconcilability between science and religion.

Yes I would have opted for the same as I feel religious dogma and science cannot coexist in the same curriculum if they are opposed to one another. This is a major contradiction and would confuse the minds of the kids (female, teacher).

These responses, though in no wise representative of the majority of educated Muslims in the UK, nevertheless query the aforementioned statements of Vogt (1997) who mentions studies which have found a correlation between higher education and a corresponding dilution of religious beliefs and practices. These studies were no doubt carried out in western countries since Vogt (1997) mentions Low Church attendance as an example. One can only wonder if the studies would turn up the same results if conducted in a country like Saudi Arabia.

#### **5.4. Conclusion**

In summary, overall the responses were similar in most respects. Only 1 of the 25 interviewed had accepted the theory of evolution as a scientific fact. A comparison of the interviewees’ responses on the basis of ethnicity and gender did not reveal significant differences to suggest that Somalis were more anti-evolution than the rest. Attention was also drawn to the two imams’ statements with regards to humans who were cursed and transmuted into apes and pigs. Future research could perhaps usefully explore the degree of correlation between such beliefs and the aversion to any suggestion of a shared human ancestry with apes which lies at the core of the theory of evolution.

The trajectory of the creation-evolution debate in the National Curriculum in the last ca. 12 years reveals a legal tightening against any creationist loopholes. In light of this the interviewees were asked whether they would opt for alternatives e.g. Muslim faith schools or home-schooling if such options existed. The majority would still prefer state schools but with some reservations. Significantly, 6 of the 7 who would opt for Muslim schools given the chance were teachers. These teachers' support for creationism resonates with the statements below:

Nearly a third of teachers believe that the theories of creationism and intelligent design should be given the same status as evolution in the classroom, according to a survey. However, 50 per cent disagreed...The poll, commissioned by the broadcaster Teacher's TV, found out that 50 per cent of teachers agreed with Professor Reiss' view that excluding alternative explanations to evolution is counter-productive, and could alienate pupils from science. (Frean, 2008).

The next chapter looks more closely at the typical reasons for rejecting the theory of evolution in state schools. In addition, the manner in which the interviewees' understood the theory of evolution is also considered.

## **CHAPTER SIX**

### **6.0. Introduction**

This chapter considers some of the main objections to the theory of evolution. The manner in which interviewees defined the theory of evolution is explored. The evolutionary teaching which posits a shared ancestry, especially between apes and humans, emerges as a lightning rod issue central to the debate. Furthermore, interviewees' understanding of the word "theory" is put under the spotlight. It is suggested that this understanding, which deviates substantially from the scientific one, is pivotal to the debate. It is argued that although some supported the teaching of evolution in schools, this should not be conflated with a cognitive acquiescence accepting evidence for the theory of evolution.

Some interviewees felt that science teachers addressed the theory of evolution briefly and cautiously for fear of offending the majority Muslim students. The responses calling for equal time for both creationism and the theory of evolution in the science classroom are also probed. It will be shown that despite the consensus against the teaching of the theory of evolution, the motivations and rationale behind this aversion may not necessarily converge. The views of the imams are interwoven into the discussions where appropriate and compared, albeit briefly. Section 3 concerns itself with the responses to the government recommendation "there is scope for schools to discuss creationism as part of Religious Education..." This statement is revealed to be a platitude concealing a minefield. Issues of disparate creation accounts and competing creationism versions among Christians and Muslims are some of the challenges thrown up.

The chapter also looks at the misgivings respondents had with regards to the perceived atheistic and conspiratorial agenda of the educational system. This latent issue will be fleshed out in another chapter. This suspicion, no doubt, stokes the flames of the debate. The denouement of the above is a hardening of attitudes with the battleground now shifting to the primary schools level.

### **6.1. Defining the theory of evolution – interviewees' responses**

As mentioned in earlier chapters, a vital task guiding this study is the approximation of stakeholders' worldviews with regards to matters of origins and the manner in which they arrive at such understandings. A common lament in the literature review was that knowledge of the theory of

evolution was flawed or truncated, especially in the ranks of creationists. Jacques Monod's belief that science subverts every mythical or philosophical ontogeny whether predicated upon the aborigine tradition or dialectical materialist can be dismissed as scientific hubris, but his statement, "Another curious aspect of the theory of evolution is that everybody thinks he understands it!" (Dawkins, 1989:18) will be shown to hold some water.

In Chapter 5, I stated that 24 of the 25 interviewees declared that the theory of evolution was unacceptable in their view. This chapter explores some of these responses with the aim of shedding light on the rationale behind this rejection. In other words, the rejections contained various nuances and degrees of unacceptability. The question guiding section 6.1 was: "How would you explain your understanding of the teaching of evolution?" The responses in the section that follows deliberately attempts to focus on the scientific understanding of the theory of evolution. Many of the interviewees interlaced their answers with ideological investments which I have elected to consider separately in chapter 8. In analyzing the answers, a pattern emerged: the lion's share of the responses can broadly be subsumed under 3 main objections which will be probed further.

- Objections to humans evolving from apes.
- An unsubstantiated theory.
- Schools did not teach the theory of evolution properly.

The views of the 3 imams and teachers will also be treated more closely in section 6.1.5. As mentioned in the previous chapter, there was much consistency in the responses. Of interest, however, is the emphasis invested in the reason for discarding the theory of evolution.

### **6.1.2. Objections to humans evolving from apes**

There was a preponderance of responses revolving around humans evolving from apes. The responses emanated from a religious worldview in which humans were perceived as the apotheosis of living creatures. Within an evolutionary timescale, humans are recent newcomers; however, the views forwarded proceed from within the normative Islamic anthropocentric model which privileges humans. One health worker, with miscellaneous degrees and diplomas in health education, describes the theory of evolution in terms of "lower" and "higher" development exemplifying the valorisation of humans.

*I see evolution as how people evolved from a lower species to a higher species. And people evolved from single cells and from there they go on developing similar to a tree branching out with the human being at the top (health worker, male).*

Indeed, this truncation of the theory of evolution evinced by a reductionist zeroing in on “humans evolving from apes” occurs frequently enough to be significant. Another way of putting it is that whereas the theory of evolution can be usefully perceived as a “bottom-up model” (tree model), the interviewees’ responses stem from a mental universe which is “top-down”: humans are privileged at the apex of a pyramid-like model, and any deprecation of their value is met with antipathy.

*I remember learning in school that humans originated from apes. Of course, before all that came the Big Bang. I also recollect that Charles Darwin was the originator of this idea. This is really quite strange as it is only a theory and anyone can forward bizarre theories. What I fail to understand is why a theory as weak and, honestly, ludicrous as this, finds its way into science books in schools. (Male, A-levels).*

The conflation of the Big Bang theory with the theory of evolution is also noteworthy. The *biological* theory of evolution is technically separate from the Big Bang theory, but this conflation of the two occurs often in the responses. The responses suggest that life on earth necessarily followed from the Big Bang. *From what I remember there was a Big Bang and somehow we evolved from monkeys is the vague memory I have from school* (female, A-levels).

At this juncture, the point does not need to be laboured that humans did not evolve from apes, according to the theory of evolution. This objection has been raised *ad infinitum* by evolutionists.

Did man evolve from monkeys? No. The concept of biological evolution, that living things shared common ancestry, implies that human beings did not descend from monkeys, but shared a common ancestor with them, and shared a common ancestor farther back in time with other mammals, and farther back in time with reptiles, and farther back in time with fish, and farther back in time with worms, and farther back in time with petunias (Scott, 2004:43).

Even when attempting to outline the scientific theory of evolution as recollected from school, participants subconsciously forwarded an understanding imbued with their religious coloration which invested humans with “superiority”. One teacher said:

*I would explain my understanding of the teaching of evolution to be the gradual process where something changes into a more superior or sophisticated form i.e. humans evolving from primates (Teacher).*

The same teacher when asked whether Allah could have employed the agency of evolution to spawn life replied:



*No because as a Muslim that would contradict the very essence of the teachings of our creator through the Qur'an and through his messenger Mohammed pbuh. Evolution and the doctrine that Islam depicts cannot coexist together.*

No doubt the likes of Richard Dawkins would have been vexed by such definitions. As was mentioned in the last chapter, Dawkins (2009:158) queries this obsession with “lower” and “higher” as a misnomer. To his mind, the Great Chain of Being model is to blame for this reductionism. By this is meant the hierarchical model where God sits on a throne followed by angels, humans, animals and inanimate objects. He states that evolution is not “aimed” at humans. Contrary to the view of the respondents, Stephen J. Gould maintained that if the tape of life was replayed, the trajectory of evolution would be dissimilar to the current one. This, in essence, would mean that humans may not have appeared at all (see chapter 3.1). Implicit in many of the responses is a protest against this sort of trivializing of human existence.

*My understanding, based on the theory of evolution is that, for instance, creatures like monkeys later evolved to become human beings. They claim there was this first cell that slowly evolved into higher forms of life. That was what I was taught in education. Personally I don't believe in it... A plant doesn't produce a human. It would be absurd (Male, A-levels).*

The above respondent's use of the word “absurd” does not arise in a vacuum. His objection echoes that of Maulana Thanvi who (see chapter 2.4.2), “In our days certain insolent, unscrupulous, and indolent people have had the temerity to suggest that Adam is the name of the ape which first turned into man. May Allah protect us from such things!” (Lumbard, 2004:109). Clearly, the whole idea is incommensurate with the religious schema the respondent employs to make sense of the world. In the response below, when asked whether Allah could have employed the agency of Darwinian evolution to spawn life, his fidelity to a religious/Qur'an-based schema is manifest.

*It is this simple: had Allah used such a mechanism, he would have let us know in the Qur'an. Why would he use such a method and then declare that he created Adam, Eve and all living things miraculously out of nothing? This wouldn't make sense at all. Why would Allah wait for so many years before giving this insight to Charles Darwin of all people? No. I on my part think the whole idea of evolution is nonsense frankly (Ibid).*

There is a consistency to many of the responses with reference to the statement “humans evolved from apes”. This aspect of evolution, albeit small in evolutionary terms, preoccupies and shapes the ultimate denunciation of the entire theory of evolution. Significantly, some of these individuals who highlighted the “apes to humans” aspect conceded some ignorance about the rest of the theory of evolution.

*There was the theory of human beings developing... that is basically as much as I can remember. I don't remember a whole lot of it but...yeah...how human beings evolved and...I don't know...monkeys and gorillas and all that family (female, graduate).*

*Evolution says that we all come from a single cell. Is the Big Bang theory involved? It also says that we evolved from monkeys. I forget the name of Darwin's book...wasn't it the "Origin of the Species" or something? There were different stages of evolution till we reached that of man. (female, undergraduate).*

These Muslim respondents considered their Islamic faith to be the preeminent factor guiding their beliefs and practices. Steeped in their religious universe, the overriding concern for them was to please Allah. In such a religious universe, what matters most is aligning their views with the pronouncements of the Qur'an. To their mind, the theory of evolution, if true, would herald the demise of their faith as it would destabilize the perceived inerrancy of the Qur'an. "Once rationalism sets in and you start adapting the Word of God to fit scientific theories based on naturalistic beliefs, there is no end to the process. If you have qualms about the historicity of the creation account, you are on the road to utter Saduceeism..." (Scott, 2004:228).

All 24 respondents who did not accept the theory of evolution as science simultaneously could not accept, even heuristically, that Allah could spawn life through the agency of evolution. In a rather novel argument, one participant's response seems to indicate that the millions of years involved in the evolutionary timescale robbed the glory from God and bolstered the cause of atheism: "I don't think that God would create the universe in such a way that the one who observes it would come to the conclusion that there is no God" (male, lay teacher). Although some conceded that living organisms adapt to their environment, they could not accept the emergence of new species:

*As a Muslim, I believe in adaptation. I believe the system of adaptation is a natural state in which Allah created mankind. I do not believe that adaptation leads to the development of new species. With this, I do not believe that human beings evolved from another species, but rather we were created. (teacher, postgraduate).*

The argument above is reminiscent of that of Christian creationists who concede that adaptation occurs in nature but does not lead to speciation (i.e. the emergence of a new species). They make a distinction between microevolution and macroevolution. One can observe that these Christians and the Muslims in this study share some commonalities. Both share a rigid interpretation of their respective texts on creation. When asked whether we share a common ancestry with other animals, one student, a PhD candidate in science education curtly stated, "No that is not science for me". Another interviewee rhetorically attempted to show the incompatibility of theistic evolution:

*Should one believe that Allah came along and made a primordial soup from which rats came out and then apes and finally humans, or the religious text which says that God created us in his image? One might agree with the theory of evolution in the short term: those moths, for example, in the 18<sup>th</sup> century changed colour from brown to black had to do with the soot being deposited in the trees during the industrial revolution. I can believe that in the short term, but in the long term to believe that over millions of years we came from rats and monkeys and so on and so forth...umm...no ( male, undergraduate).*

Over and over again, the candidates, after some philosophizing and digression, returned to the Qur'an as the undisputed supreme arbitrator which adjudicates on the issue of origins. "I would say that I don't believe in [theory of evolution] it because I believe in the scripture...My starting point is scripture and the fact that the world was created in 7 days, and that is not something that I would stray from" (female, Masters student).

In conclusion, interviewees' understanding of the scientific theory of evolution overwhelmingly narrowed in on the "apes to humans" aspect. It was argued that this was an extrapolation from their religious worldview which invests humans with greater value than other sentient creatures. As one respondent succinctly put it:

*I don't believe that God would create any intermediary forms of life. What disproves all of this is that we believe that God created Adam as the first human being and he was fully formed. He wasn't half ape or half anything else. Allah also says "we have ennobled the sons of Adam" by the various faculties and honourable ways in which he created them. I really believe that as human beings we were ennobled and given a certain dignity by the creator and I believe that in many ways evolution denies that (male, lay Muslim theologian).*

Some of those interviewed conflated the Big Bang with the theory of evolution. They were unable to remember anything significant about the mechanism of evolution. In the final instance, however, their rejection of the theory of evolution pivoted on their understanding of the Qur'an with regards to the creation of Adam and Eve, the progenitors of the human family. In considering the overwhelming aversion to the theory of evolution, two other issues need to be factored in: one is the aforementioned belief, expressed by the imams, that some humans had been transmuted into apes and, secondly, the conflation of evolution with atheism.

*My main bone of contention with the theory of evolution is that I have hardly come across any individual who believes in this theory who also happens to believe in God. They seem to be mutually exclusive (male, lay scholar).*

Often, interviewees seemed confident in their dismissal of the theory of evolution because they understood the word "theory" to mean a "hunch" or "idea". This thread is explored in the next segment.

### 6.1.3. An unsubstantiated theory

For many of the respondents, the astronomical number of years involved, coupled with the fact that no palaeontologist was around to observe and document evolution, undermines the whole edifice of evolution. In other words, when interviewees' remark, "it's just a theory!" they are challenging whether evolution is a testable and falsifiable theory. The respondent below employs a favourite creationist argument – missing fossils to brush evolution aside as a "theory" understood as a hunch lacking any rigour.

*No, I don't look at the theory of evolution as a scientific fact for several reasons. First of all because there is a reason it is called the theory of evolution, so it's not a fact. There are some gaps in the theory such as the Cambrian explosion where 250 million years ago they say that there was an explosion of previously unknown animals suddenly appearing without precedent. And Charles Darwin himself said there were gaps in the fossil record (Male, lay scholar).*

Often, when asked to explain why they couldn't embrace the theory of evolution, some of the participants would shrug and say that it defies the imagination. This is sometimes called the "argument from incredulity". Another participant appeared to obfuscate the definition of theory, but was, in essence, rejecting the grounds for calling evolution a scientific theory: "Theory would be an informed idea where a person has gone out and done some research - basically has come up with an idea. He has no proof but just a hypothesis to say this is what I believe in. One has to come up with some proof for the theory" (male, undergraduate).

As will be demonstrated later, many seemed open to the theory of evolution being taught in schools not because they held it in high esteem as an authentic scientific theory at par with other well-established scientific theories, for example, but because they equated "theory" with a "belief". So rather than adopt the animated, sabre-rattling tactic of the Christian creationists, the Muslims in this study opted for a more subtle tactic such as the following:

*You don't need to say the theory of evolution is correct, but you can say there are those kinds of people having these kinds of beliefs about the theory of evolution, and they are supporting or refusing the religions or the existence of God... They must be taught at least what the theory of evolution is, and then they can refute and say this is not scientific etc because you know there is scientific evidence which refutes the theory of evolution (male, PhD candidate).*

The literature review makes some reference to this conundrum. In chapter 3.2.4, it was shown how the famous court case, *Kitzmiller v. Dover* (2005), was precipitated by the Dover (Pennsylvania) Area School Board which required all teachers to read out a disclaimer with regards to the teaching of evolution. The disclaimer shares much in common with the ethos underpinning many of the

interviewees' responses in this study: "Because Darwin's Theory is a theory, it continues to be tested as new evidence is discovered. The theory is not a fact. Gaps in the theory exist for which there is no evidence. A theory is defined as a well-tested explanation that unifies a broad range of observations" (Scott and Branch, 2006:94, 95). The parallel with many of the responses in this study is evident:

*It is taught as a scientific fact, but if it was a scientific fact it wouldn't be called the theory of evolution. It would be called...err....I don't know...the evolution process or something like that. Essentially it is a theory and should be taught as a theory alongside other theories of creation or development or whatever you want to call it. I think the fact that it is taught as a fact is wrong. I don't consider it a fact the same way as the law of gravity or anything like that* (female, postgraduate student).

Undoubtedly, the raging creation-evolution debate has left some unable to distinguish among the various usages of the term "theory". This has become another battleground with many creationists employing the term pejoratively. Such is the rancour surrounding the term that the government had to weigh in with an indirect rebuke to creationists. In 2007 the Department for Children, Schools and Families issued guidance on the place of creationism and intelligent design in Science lessons.

The use of the word "theory" can mislead those not familiar with science as a subject discipline because it is different from the everyday meaning of being little more than a "hunch". In science the meaning is much less tentative and indicates that there is a substantial amount of supporting evidence, underpinned by principles and explanations accepted by the international scientific community. However, it also signals that all scientific knowledge is considered to be provisional as it can be overturned by new evidence if this is validated and accepted by the scientific community (government guidelines on science teaching (Dcsf, 2007).

Those in the evolution camp would explain away the whole issue as a not-so-subtle tactic to smuggle in creationism into the classroom. The strategy is meant to work in this fashion: first creationists hammer away at the meaning of the word theory and, after some cracks appear, make the claim that fairness would demand other equally competing theories (read creationism) feature on the syllabus. Note the responses below:

*I oppose the theory of evolution being taught as a scientific fact in schools. Evolution may be taught as a theory or an opposing idea with the clear evidences for and against it. Likewise creationism should be taught with evidences (religious as well as non-religious)* (male, teacher).

*I am for the discussion of such theories – and evolution is one among the thousands of theories. A theory must be subjected to much investigation before it can become an accepted scientific fact, and evolution has not reached that stage yet* (male, A-levels).

To summarize the findings in this section, one of the main objections of interviewees to the theory of evolution was their understanding of the word “theory”. Their responses indicated that theory meant no more than conjecture. Emboldened by such an understanding, they felt strongly that creationism ought also to be presented as an alternative and competing theory in the science classroom. It has also been briefly suggested that participants’ verbal support for the teaching of evolution in schools should not be conflated with a cognitive acquiescence accepting evidence for the theory of evolution. I contend this can more usefully be perceived as tactic recognition of the unassailable position evolution commands in the educational system in the UK. This thread will be fleshed out later. Attention will be drawn to references about a lack of proper engagement with the theory in schools.

#### **6.1.4. Schools did not teach the theory properly.**

In the introduction in chapter 1, various scientists, educators and other stakeholders stated that anti-evolutionism seemed to have an Islamic flavour. Dawkins, for one, did not shy away from naming what he believed to be culprits behind this proliferation: politicians who are concerned with political correctness and promote a naïve multiculturalism at the expense of science, the discourse of Islamophobia which silences legitimate critique and the literalist tradition with its uncompromising acrimony towards the theory of evolution (Macrae, 2008). As mentioned in that chapter, none of Dawkins’ books have been translated into Arabic and are heavily censored in Turkey (Henderson, 2009). To counter the fact that 30% of teenagers adhere to some form of intelligent design (which he blames on the rise of Muslim influence), Dawkins and others associated with the British Humanist Association lobbied the government on several occasions to introduce the theory of evolution from the age of eight to undermine creationist indoctrination.

Whether this strategy will work or not remains to be seen, but often attention was drawn to the weak engagement with evolution in schools. One female said:

*I would like to add that our teachers did not delve deeply into this subject as much as I would have liked them to. I don’t know the extent to which this subject was covered in other schools but my school only skimmed the surface. Maybe they were afraid of the objections and controversy this could spark. I don’t know. This could be likely as most of the students were from a Muslim background. However, I wish they would have taught me more although I still reject this theory (male, completed A-Levels).*

The teacher mentioned earlier also shared with me that this was the case. He stated that the theory of evolution, which he taught, was not given much treatment for two reasons: firstly because the chief focus is on doing well in the exams and not probing evolution’s validity. Secondly, given the large numbers of Muslim pupils attending his school, the whole science department was careful not

to stir up a hornet's nest. Another respondent, who teaches another subject stated, "I have no memory of being taught evolution although we may have been exposed to some at GCSE level. It would most likely have been addressed as fact rather than theory" (Male, teacher).

In one interview, whenever the respondent struggled to find an answer, he would resort to the refrain, "As for evolution, like I said, it hasn't been taught explicitly in schools" (Male teacher). Obviously, there is a legitimate debate to be had if Muslims who have studied in British state schools regret the little teaching they have had in relation to the theory of evolution. Although rejecting the theory of evolution, they came across as genuinely keen to learn more about the subject. One female, employed in the transport sector, reflects this desire:

*For example, I finished my GCSE when I was 15-16, and now I am 24 and I don't remember much about what I was taught. It is not discussed. The Mosque does not discuss this; the home does not discuss this because – I should not generalize this – most homes don't know much about this debate.*

**Interviewer:** *Why is there this silence do you think?*

*I don't think it is intentional. There is this bureaucracy – I think as far as I can remember, schools taught about evolution with the objective of students just passing the exam rather than a life lesson. Especially in this country, it was not about learning about where we came from, but an exercise in passing the exam.*

Some of the interviewees reasoned that if the theory of evolution is a fact established beyond doubt it should be demarcated as a separate subject in its own right. According to them, a subject that purports to have evidence for the origin and development of life on earth should be accorded such privilege. They could not understand why evolution was interwoven with subjects like history, psychology and even biology. As one participant stated:

*I would say that evolution as a theory is not taught in schools, at least from my experience. I think its core ideas are infused in subjects like biology and anthropology. As a student I remember from textbooks and lectures that it would often be inferred that evolution was the most plausible explanation on many occasions (Male, teacher).*

One teacher criticized a 2010 BBC documentary which he felt unfairly singled out Muslim faith schools to tarnish their reputation.

*The program spoke in passing about the theory of evolution as one of the many issues that such schools were concealing or twisting when teaching their students. Just a passing note: there are many Christian schools in Britain but I am unaware of anyone that has studied at one of these places who isn't aware of the theory of evolution (male, teacher).*

More research exploring the quality of teaching of evolution in Muslim faith schools will need to be done to weigh in on the above criticism, but, clearly, some science educators harbour suspicions about the commitment of Muslim faith schools to the teaching of the theory of evolution.

In summary, responses indicated a general dissatisfaction with the quality of teaching on the theory of evolution in schools attended mostly in London. The interviewees alleged that the teaching was instrumentally tailored to meeting the syllabus stipulations and passing the exams, but failed to grapple with ambivalent or dissident views. At least four respondents alluded to the presence of many Muslims as one potentially intimidating factor.

### 6.1.5 Responses of imams

Two of the three imams harboured views which broadly aligned with the majority of responses in this study. Imam 1, in addition to A-levels, has various clerical qualifications. Imam 2 has a Masters degree and is simultaneously pursuing a PhD. Imam 3 is the only one in the entire study who felt belief in Allah and a concomitant acceptance of the theory of evolution were compatible. The views culled below are relevant to the thread explored in this chapter: their understanding of the theory of evolution.

As expected, these men were articulate in putting forward their arguments although holding some very strong views. Imam 1 nuanced the Islamic position on the theory of evolution,

*Islam does not say that evolution does not take place. A distinction must be made between evolution and adaptation. The tiger, for example, evolved from the cat, but we did not come from Australopithecus or Pleistocene creatures. Chihuahuas adapt to their environment by human manipulation. The dachshunds were bred to hunt badgers through selective breeding, so adaptation is not evolution (Imam 1).*

Imam 1 was conversant with the theory of evolution and was very active on the internet countering its influence, according to him. I was invited to a room in cyberspace where he held a lecture against the theory of evolution. The room was well-attended with many of the attendees often injecting statements of support. I was introduced as a researcher and encouraged to take the microphone and ask questions. Later, others chimed in with responses. Apparently, other imams and lay theologians were present, I was told. I found this to be an auspicious moment to informally engage with some of the others in the room hoping to find dissenters – to no avail. The answers given by the anonymous participants in the chat rooms were not included in the study. However,



most of what I heard there did not negate or add anything to the views of the cohort in the study. In the formal interview, I sought a clarification on what kind of creationism this imam promulgated, given the plethora of versions out there. I asked whether creationism should be taught in schools. His answer demonstrated his awareness of the dominant young-earth perspective which he denounced:

*It depends on what kind of creationism. These silly young earth Christian creationists believe Adam was formed 6000 years ago. The creation text in the Bible and Qur'an do not give a dateline – they are ambiguous. Again, these proponents believe in a global flood which changed the face of the earth and build their science on it. The Qur'an states the flood of Noah was local around the Black Sea and the Middle East. It is typical of these Christians, who read something into the Bible which is not there, and then persecute people like Galileo and Bruno (Imam 1).*

Obviously, the Catholic authorities who persecuted Galileo and Bruno were not young-earth creationists but this was probably the first time an interviewee clearly delineated the difference between young-earth creationism and Islamic creationism, albeit a portion of it. As mentioned in chapter 3.2.3, the difference between Islamic & Christian creationism conceals some thorny issues. To enumerate:

- Muslims do not subscribe to a young-earth creationism
- The flood of Noah is considered a local flood which cannot be used as a universal tool to explain physiographic changes in the earth.
- Unlike young-earthers, Muslims embrace the Big Bang theory.
- Given these discrepancies, which creationist version can be taught in schools is a legitimate challenge not addressed at the moment.

When asked to recollect what he remembers about the teaching of evolution in school, the imam's answer below resonates with earlier responses about the lack of proper teaching in school.

*That is a highly subjective question and it depends who you speak to. Some people do not remember what the theory of evolution was about at school. I don't recall much to tell the truth. They didn't address it properly. I know Darwin was in the book. He actually looked like one of our teachers and that is why I still remember him very clearly (Imam 2).*

The same Imam, when asked whether he accepted the claims of evolution, stated “It depends on what aspect of evolution you are speaking about. The primate to man issue is such a controversial one. It would not have been so controversial if there was definitive and irrefutable proof, unless one believes that half the world is wrong or incredibly stupid” (Imam 2). As referred to earlier, the main bone of contention seems to be the “apes to humans” aspect. This led Imam 3, who accepts evolution to state, “And this is a popular one – to have a debate on the word ‘theory’

because to a lay person you can easily convince them that it is not fact. So I am not surprised people are clinging on to that loophole if you like” (Imam 3). Imam 3 succinctly captures the general state of the British Muslim scene with reference to the theory of evolution:

*I don't think the Muslim world is ready for a debate on the theory of evolution yet. Many Muslims, certainly the devout Muslims, are creationists and reject the theory of evolution. I used to be that way – I am from a very devout Muslim family being from a Salafi background. And all the devout Muslim families that I have ever known – through the Mosque and various activities - are creationists. Until recently, I had never come across any Muslim who had accepted the theory of evolution. This is because of a particular understanding of the Qur'an and also the Haddith but mainly the Qur'an. There is a common view that evolution is incompatible with the Qur'an and that if you believe in the Qur'an, you cannot subscribe to Darwin and evolution.*

In summary, the two imams, who rejected the theory of evolution, cited objections pertaining to the primates to man aspect. To their mind, variation and adaptation are integral to the process of evolution, but they did not lead to speciation. One imam touched on the aforementioned critique of the state school teaching about evolution. These imams also stated (see chapter 5) that Allah had cursed some humans transmutating them into apes and pigs, which, in their eyes, reinforces Muslim aversion to the theory of evolution. The last imam, who espouses evolution, conceded the difficulty of propagating evolution among Muslims. He states that there is a consensus in the Muslim community that the Qur'an and Darwin are incompatible.

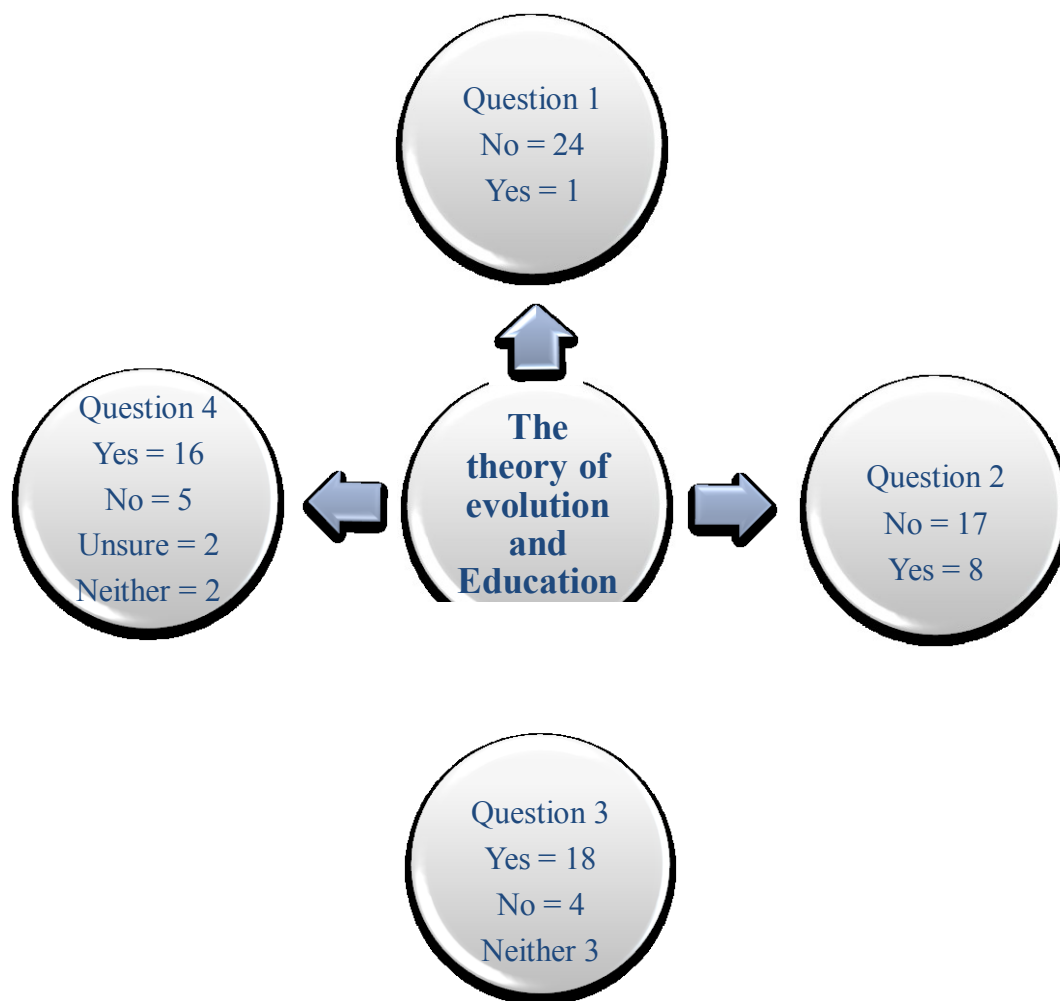
Should evolution be taught in schools and which forum is appropriate for the debate are among the issues explored in the next section.

## **6.2 Should the theory of evolution be taught in schools?**

Figure 6.1 provides a quick overview of the responses pertaining to the 4 questions below.

1. Do you accept the theory of evolution as a scientific fact?
2. Should it be taught in school as a scientific fact in school in the UK?
3. Should evolution and creationism be given equal time?
4. Is religious education the right forum for the debate?

**FIG.6.1. Responses based on 4 questions pertaining to the teaching of evolution in schools.**



As can be gauged from figure 6.1, question 2, the majority comprising 17 individuals wished to see the cessation of the teaching of evolution in schools. Responses reveal some trepidation to the effect that Muslim children are being deliberately targeted too early with the aim of inoculating them against creationism. They opined that children are too malleable and impressionable to be exposed to the theory of evolution in Key Stage or 4. “I support the idea of not teaching evolution to school children as this would firstly cause quite a lot of confusion for such a young audience and contradict what they have previously been taught...introducing such an idea for consideration alone would be heretical” (male, teacher).

His use of the word “heretical” is telling. The respondent couches the debate discursively in fundamentalist terms. This resonates with the contention that sees modern fundamentalism as a *reaction* to modernity rather than a sentimental longing for a pristine pre-modern past (Harrison, 2007:319). Among the themes piggybacking on fundamentalism are: narrow parameters allocated to the role of reason in criticizing religious belief; a hermeneutics that minimizes the need for interpreting texts; a mindset that accommodates science only in so far as it does not infringe on religious belief; a

rejection of pluralism with a concomitant privileging of some form of religious exclusivism; attempts to demarcate and compartmentalize the religious and political domains; leaning towards the right in politics and, finally, scepticism towards feminism and the call to interpret religious texts to effectuate greater gender equality (Harrison, 2007:320). Another respondent equated the teaching of evolution in schools to a coerced imposition of a religion upon children.

*Personally, I don't think it should be taught as a pure science unless there was some evidence behind it. There is no real proof that humans evolved and so you would be imposing an idea or belief upon someone else. It is like imposing atheism on someone who believes in a religion like Hinduism or Christianity with their own beliefs on how the world was created. It would be saying that parents are wrong, the religion is wrong, but Darwin was right even when there is no proof to support it (male, undergraduate).*

The majority who opposed the teaching of evolution as scientific fact in schools championed the claim that either the theory had been debunked or that it was too controversial to teach – in other words, it does not enjoy the status and prestige of other established scientific theories (e.g. the law of gravity or the theory of relativity).

*I oppose the teaching of evolution anywhere because there is no conclusive evidence that humans have evolved and Darwin's claims that we evolved from primates has been refuted by other scientists so this makes the whole theory unsubstantiated (female, teacher).*

*I oppose the teaching of evolution in school at all. It may be spoken about briefly to broaden the mind of the student but in no way stressed as fact. This is a highly controversial topic amongst many scholars and hasn't been proven as fact. It also goes against any religious beliefs as scientists that believe in this theory don't believe in the existence of God (male, teacher).*

Among the ranks of those who wished the theory of evolution to be taught, we find that none were in thrall to the claims of the theory, but wished it to be taught for practical reasons. The proliferation of knowledge of every hue on the internet, which makes it impossible to censor information, was cited as a major reason for not opposing the teaching of the theory of evolution. This is a far cry from showing enthusiasm and curiosity for the inventions and discoveries of science.

*A boy could be having a discussion with someone else on the internet about the theory of evolution. So if we want this boy not to be contaminated with the ideas of others, we need to teach what the theory of evolution really is. You don't need to say the theory of evolution is correct, but you can say there are those kinds of people having these kinds of beliefs about the theory of evolution, and they are supporting or refusing the religions or the existence of God. So I don't see any need for not teaching the theory of evolution (male, PhD student).*

It is significant that many of the respondents throughout the interviewees subconsciously linked the theory of evolution with atheism, as in the statement above. One interviewee, with teaching

experience in Saudi Arabia, deemed it important to teach evolution for fear that some, disillusioned with Islam for various reasons, may espouse evolution as a political tool. “I believe everything should be taught. Evolution is a world theory whether we like it or not. In the same vein, many, especially in the Middle East, are turning to evolution in response to their grievances with religious authorities or religion itself” (male, teacher). This did not mean that he held views sympathetic to the theory of evolution:

*Evolution should definitely be taught as a theory; where it comes from, those who support it and those who don't. This will help in developing an informed and critical view of evolution. After all, you can't effectively challenge a theory if you don't have an intimate understanding of it. So evolution should be taught in places like Saudi and Sudan, not as an ultimate truth, but as a theory that exists today. If indeed evolution is a hoax then that conclusion will be arrived at by all who chose to use their intellect (Ibid).*

In summary, Section 6.2 drew attention to the responses opposed to or in favor of teaching the theory of evolution as scientific fact in schools in the UK. The majority dismissed the need for teaching evolution in schools. Among the reasons culled from the responses we find the following: arguments that children are too young to be exposed to such complex theories; arguments from a parochial religious mindset which equated the teaching of evolution with heresy against Islam, and claims that evolution has been debunked by other scientists – which, by extension, militated against teaching evolution. Finally, the 8 respondents who were not opposed to the teaching of the theory of evolution as science in UK schools did so for different reasons. None of them accepted evolution as a fact, but felt that forces such as globalization – especially the internet – would render any censorship impossible and even undesirable. A better strategy, they opined, was to engage with the children and counter the claims of the schools and opinions leanings towards the theory of evolution.

Clearly, both sides of the creation evolution divide feel that the children's' minds are the battleground - “ground zero”- of the future showdown. The previous chapter outlined steps taken by the British Humanist Association lobbying the government to introduce the teaching of evolution at Key Stage 2 to inculcate evolutionary understanding as early as possible. Andrew Copson (2009) felt this would counter the “natural cognitive biases - such as our human propensity to look for design and purpose that hinder the acceptance of evolution”.

Creationists, especially in the USA, are associated with the slogan “teach the controversy”. What are the opinions of those interviewed in this study? This will be considered in the next section.

### 6.2.1 Equal time for creationism? Teaching the controversy

18 out of 25 interviewees felt that evolution and creationism ought to be given equal time in the science classroom. The majority's arguments revolved around fairness and the need to evaluate both claims. Imam 1, for instance, shared with me that banishing creationism from the science classroom reinforces Muslim suspicions that there is a conspiracy. Indeed, the indignation of some respondents is manifest: "Why is creationism marginalized and treated as if it doesn't exist when so many believe in it? This smacks of arrogance on the part of evolutionists. I believe if both are given equal time, then it will be clear for people with common sense to see the irrationality of evolution (male, A-levels). Another teacher argued, "I'm an advocate of creationism but students should be left to make their own conclusions. Preventing them from knowledge and information is futile. It is only a matter of time before the children get exposed to other ideas" (male, teacher). Another conceded ignorance with regards to creationism, but still supported its introduction in science classes, "I'm not familiar with the principles of creationism but I would guess that it deserves equal classroom time" (male, teacher).

Implicit in some of the responses was the suspicion that there was a deliberate and coordinated conspiracy to gradually relegate creationism to religious education classes where it would not be taken seriously by pupils. One teacher stated:

*For any logical discussion both theories need to be introduced as we are all aware both go hand in hand. Sadly throughout my experiences in the UK education system, these two theories were separated and in hindsight it has become apparent that creationism was marginalized to a side discussion in Religious Education class, whereas evolution was regularly discussed as a concept, and vindication for this theory was constantly being sought during classes about reproduction and adaptation in biology lessons.*

One interviewee, when asked how religious claims could satisfy scientific criteria for assessing evidence, only replied, "The basis of Islam is rational, and I think that a coherent, intelligible argument can be put forward" (male, teacher). Significantly, many of the interviewees maintained that Islam was a rational religion, unlike Christianity, which buoyed them in their confidence that it would be commensurate with science. A couple of interviewees expressed the vital need for all students to be taught that there is a God, "But I believe the students should be taught there is a Creator, and then you should choose what you want to believe in" (female, A-levels). Paradoxically, they simultaneously objected to the atheistic implications of evolution, later in their responses.

### 6.2.2. Questioning teachers' impartiality

While the above can be categorized under the “need to evaluate both claims” banner, there were some who were more nuanced and felt that teachers could not really be impartial. One respondent, doing her Masters currently, despaired of the equal time suggestion. If teachers of religion are atheists, how one can expect teachers of science to teach creationism effectively, she reasoned. It is worth reproducing the opinion below at length as it captures this stance adequately:

*If it was up to me people would have been taught creationism undoubtedly. But giving equal time would demand that the ones who are doing it would be open-minded, at least to creationism which I believe is not the current situation at all. I believe that most people who teach science have an antagonistic attitude towards creationism and a heavily biased approach. So that would make it somewhat difficult. I believe that a lot of people in the science community have an almost condescending attitude towards religion which makes it more difficult to have that discussion in an open atmosphere. So basically, if impartiality could be obtained, and people could approach it with an open mind, then I would recommend it. But seeing current circumstances, I doubt that that can be done.*

Whereas the first two imams, believed that creationism should be taught at par with evolution, the third imam defended the current status quo stating,

*The arguments on both sides are really quite simple. On the one hand is the scientific perspective on the origin of the different species, and on the other is the literalist, religious, fundamentalist perspective forwarded by Christians and Muslims which says that God created all things directly in some sense. In addition, there are an increasing number among Christians and Muslims who say that God created creatures through evolution. Professor Denis Alexander is one of them. You may want to look up Ziauddin Sardar (Imam 3).*

Significantly, although advocating creationism, only one other interviewee supported this imam's view. This Somali female was inclined to believe that teaching creationism was not the responsibility of the school, but parents.

To summarize, the overall majority called for equal time for both creationism and the theory of evolution in the science classroom. This call was undergirded by perceptions of what constitutes for fairness. While this sentiment was common, some felt that atheism in schools was systemic, and teachers probably incapable of presenting both sides impartially. The 3 imams also answered in a manner consistent with their understanding of the theory of evolution. The first two welcomed such

a proposition whereas the third imam defended the status quo arguing that creationism was not science.

The idea of utilizing religious education classes to explore the debate, recommended by the government, is considered in the final section of this chapter.

### **6.3 Religious education as the forum for the debate**

The government, in response to a creationist organization called Truth in Science, which sent packages of creationist teaching material to every secondary school in 2006, prepared a guidance on creationism for teachers and added, “There is scope for schools to discuss creationism as part of Religious Education – a component of the basic school curriculum – in developing pupil’s knowledge and understanding of Christianity and other religions” (Dcsf, 2007; see Appendix G). This question was put to the interviewees (see Appendix F). Figure 6.1 shows that 16 responded in the affirmative. However, the numbers do not say much about the reservations and concerns of the interviewees. All, including Imam 3 - the only participant rejecting creationism - supported religious education (hereafter RE) as an appropriate forum. The gist of what they felt is encapsulated in the statement, “I definitely feel that there should be some theological commentary on the debate” (male, teacher).

Significantly, however, the majority reacted negatively to what was perceived as subterfuge aimed at sanitizing creationism of any semblance of science.

#### **6.3.1 The debate in RE sends the wrong signal**

The respondents in this category clearly were nonplussed that creationism was relegated to the religious education arena by the government. There is awareness that as long as creationism is banished from the science classroom, its reputation as a viable alternative suffers:

*I don’t see a problem with this issue being debated in the religious education arena but a better idea would be to debate it in the Science education arena. Why is it that creationism should be associated with religion? People often equate creationism with religion and evolution with science. We are sending the wrong message. Guidance on Creationism can and should be discussed in a broader arena where scientific terminology is employed to substantiate creationism. It should not be limited to the religious education arena. We are doing a disservice to the subject from the very beginning (male, teacher).*



One teacher felt the fact that the government even mentioned this debate is progress. However, he also contended that the current separation does injustice to creationism – particularly the confinement of creationism to RE alone. In his view, “Keeping it in the realm of Religious Education only strengthens the idea that it is in the bracket of philosophy and not science, where the same audience feels is the home of the theory of evolution. I feel any area where evolution may appear is the same arena where creationism should also be” (male, teacher).

There is a conviction in many of the responses that creationism is a bona fide science. The content of this science was not forthcoming when asked but this perception was firmly rooted.

*I want to say it's the wrong forum. For it to be taught within the religious education framework shuts down the discourse because that means any science that comes to back it up becomes irrelevant because the focus is, "This is what people believe in", but I do think we need to hear more of the science behind creationism. I don't think we hear that enough. If it was also taught in the science classroom we could hear about the science which comes to back up creationism*  
(female, postgraduate student).

There is some resonance with the discussion in chapter 3.3.4. The judge in *McLean v. Arkansas* (1982) decried the “contrived dualism” strategy employed by creationists in which evolution was relentlessly attacked and discredited in the hope of holding up creationism as the only other alternative – without making a scientific case for creationism. The judge ruled that a scientific theory must be: guided by natural law; explained by natural law; testable against the empirical world; tentative and falsifiable (Fowler & Kuebler, 2007:337). On these counts, creation science was deemed unscientific.

Keeping the debate in RE alone would reinforce the perception of creationism as “superstition”, according to another interviewee (female, A-levels). The interviewees genuinely believed that creationism was a serious contender to evolution which was being undermined by an atheistic educational system. “The current practice of only promoting evolution in the science classroom not only strengthens its prestige as the only credible theory, but also serves to indoctrinate the children into believing it in the absence of any contending theory” (Ibid).

The next thread looks at the views of those who were concerned about the disparate creation account of other religions in RE.

### 6.3.2 The challenge from disparate creation accounts

This section brings together the views of those who quite correctly raised the issue of different creation accounts within the major faith traditions in the world.

*This is too difficult to discuss in a school-setting, and would require instructors to be educated on different theological perspectives. Not all religions hold the same belief of creationism. Even within religions that accept creationism different ideas exist to explain it. This would be a difficult issue to be tackled in the confines of a classroom (male, teacher).*

One student, after acknowledging the conundrum, attempted to suggest a tentative solution, “I understand that since the diverse religions have disparate accounts of creation, this can cause some problems in the RE class. Maybe one way to resolve this is to group together religions which have a similar account of creation in one teaching session and those who have a different account in a later session” (male, A-levels). In a similar vein, another interviewee believed the creation account of the Abrahamic faiths should be taught in RE:

*I think RE is the right forum to discuss this debate because particularly the religions who believe in Adam and Eve won't have any other chance to discuss this issue any other place besides RE.... In particular when it comes to Christianity and Islam, they should discuss why or why not they believe in evolution. The other religions also should be involved although they are not Abrahamic because they too learn about the other three religions (female, transport sector).*

Whereas the above respondent felt the Abrahamic faiths shared a common platform amenable to the teaching of creationism, another felt this would be counterproductive, “The religious education classroom in my opinion is not suitable for such a purpose because many religions do not believe in the Big Bang or have a creation narrative as the three monotheistic religions have” (female, A-levels).

Obviously, this issue poses a serious challenge from the perspective of safeguarding the principle of religious pluralism. Barnes (2007) highlights this conundrum that bedevils religious education namely that of downplaying the differences in each religion. Let us say that RE teachers attempt to take the Guidance on Creationism extract seriously. How do they implement this in practice? Hindus believe, according to one account, the world was created from a lotus flower emerging from the navel of Vishnu. How can this be reconciled with the creation of Adam and Eve in the Abrahamic faiths? Understandably, the latter feel slighted that their creation account is put at par with that of other religions and, perhaps, vice versa. For those who maintain that creationism must be taught in the science class, a host of equally difficult questions crop up: are science teachers

expected to harmonize the creation accounts of all the religions in RE and then somehow present a common “scientific” version? What about the many mainstream Christians, Jews and a few Muslim academics who accept the theory of evolution?

Altogether, 9 interviewees did not answer in the affirmative. These views will be looked at what follows.

### 6.3.3 Confront evolution at the source

These respondents were reluctant to answer in the affirmative because they reasoned this would be a snare. They felt the best strategy to deal with evolution was to confront it at the source – the science classroom.

*I believe this debate should be had in the science class and not the religious education class. The reason for this is that concepts like the Big Bang, evolution etc are often introduced in the science class for the first time for many students who have not heard about them at home. It is plausible to expect that some of these students will automatically compare the theory of evolution with their own religious beliefs about the origin of the universe, and life in general. So it seems most logical to invite these students to discuss their religious beliefs in light of the scientific theories they are being introduced to. Space should be created for such a discussion (female, A-levels).*

Another respondent agreed along similar lines: “The religious arena is appropriate for such a debate if the science arena has an equal opportunity to argue their point of view. For an answer to be obtained, there should be people from both sides involved in the debate” (female, teacher). For one interviewee, the whole issue of finding an appropriate forum was an exercise in futility because the problem of bias against religion persists.

*A lot of people talk about religious people being intolerant but there is a very aggressive secular materialistic movement out there which ridicules the views of anyone who comes up against what they have to say which would force them to go underground. Whether or not teachers of religious education are qualified or not to teach about this subject is secondary to the fact that they are biased against creationism anyhow. There is standoff between the two communities and I can only see the chasm widening as it has been for the last many centuries. I see this whole issue as a difficult one because what is lacking in such a discourse is the ability to tolerate the views of those who do not agree with you (male, lay theologian).*

The view above aligned with that of another teacher who also had misgivings about the agenda of the state. The scientists he mentions are Muslim ones: “No, I think that this should be left to the religious scholars and scientists as they have the knowledge to discuss such matters. Our children

should not be filled with controversial ideas that may brainwash their thinking into believing that GOD does not exist (South African male, teacher).

With regards to the views of the imams, imam 1, as mentioned earlier, was sceptical of the kind of creationism on offer. He ridiculed young-earth creationists arguing their version was untenable stating, “As mentioned earlier, Muslims do not subscribe to a young-earth creationism which is based on a faulty reading of the Bible”. Imam 2 felt the debate ought to be conducted in both fora and suggested there was a conspiracy afoot to silence creationism:

*I don't understand why there should be such a debate. It almost seems like there is a conspiracy. It may not be true, but it seems like someone's got a massive agenda and they are trying to push it through. You can't exclude one or the other...I mean they are two sides of the same coin. So why not? At the least, one can talk about it as another theory within science - although we may not agree that it is science. If I talk about creationism, I should talk about the other theories. Just because we are in a science class doesn't mean we cannot talk about other subjects that may impinge on science. That's why when discussion of creationism is forbidden one gets the impression that there is more than meets the eye...one gets baffled (Imam 2).*

Imam 3 also recognized the need for a forum to engage students from religious backgrounds. Although empathizing with Professor Reiss, he certainly did not support teaching creationism in the science classes.

*I think Professor Michael Reiss said the same thing. He certainly was not advocating teaching creationism as some sort of scientific topic but he was just pointing out that there are many kids – mainly Muslim, Jewish and Christian – who come from creationist homes and have to be engaged in or there is no chance of having that debate. However, if as we all know, evolution has solid scientific evidence, then it deserves to have a monopoly in the science classroom. It's like saying that Newton had a monopoly in the physics classroom because of the theory of gravity – well, it's true (Imam 3).*

In summary, section 6.3 explored the responses to the government recommendation “there is scope for schools to discuss creationism as part of Religious Education...” Although the majority were positive to this recommendation in principle, the responses elicit some misgivings. Some felt this sends the wrong signal and belittles the credentials of creationism. Others interrogated the practical implementation of such a recommendation given the disparate creation accounts of some of the world religions while, still others, cynically felt creationism ought to be taught in the science class alone to confront it at the source. Two interviewees felt that the atheistic agenda was so antagonistically disposed towards creationism that no decent discussion could ensue. Finally, the

imams, who were creationists, advocated teaching creationism in science and religious education classes. One imam critiques young-earth creationism and would not favour teaching it in religious education. Finally, imam 3 acknowledged the need for a forum but stated that creationism did not belong in the science classes.

The responses of these Muslims are, obviously, informed by their perception of science in general. The confluence where a religiously-imbued epistemology meets science is explored through the interviewees' responses in the next chapter.

## CHAPTER SEVEN.

### 7.0 Introduction

In chapter two (2.3.1), some Muslim scholars (e.g. Bassam Tibi, 2009), contended that if the contemporary Muslim world is to shake off the current stagnation and decline in the field of science, greater epistemological flexibility will be called for. The current miasma, he argued, can be reversed by reviving Ibn Rushd's (Averroes) concept of "double truth"/*al-haqiqa al-muzdawaja* - a separation of "religious from rational knowledge while acknowledging the validity of both" (Tibi, 2009:66). This chapter considers some of the ways in which the interviewees navigate between the tension-filled domains of reason and revelation.

It has also been suggested that the vicissitudes of the interpretation of religious texts (Qur'an and Haddith) is central to the creation-evolution debate from an Islamic perspective. The first part looks at responses aimed at exploring the level of the interviewees' hermeneutic flexibility – whether a literalist or figurative hermeneutic approach is ascendant. Questions material in this regard include: "As a Muslim, do you believe that Allah could have employed the agency of evolution to bring about life?" and "How do you reconcile scientific advances that challenge or contradict the Qur'an, for example?" This chapter also considers questions asked in order to gain some insight into whether interviewees were content to adhere to the precepts underpinning modern science (methodological naturalism) or reject it because God, as understood from within a theocentric worldview, is the presupposed agent of causation.

The last section concerns itself with the concept of *tawhid* – the unity of God. If Tibi (2009) is right, then a *tawhidic* worldview may perhaps impede progress in the field of science - which could by extension be one potential reason behind the overwhelming lack of support for the theory of evolution. Can British Muslims accommodate a binary division between science and religion reminiscent of Gould's NOMA-model, or is the atomization of existence following Descartes antithetical to Islam? How does this influence interviewees' understanding of the origins of life? These are some of the questions central to this chapter.

## 7.1 Reconciling the Qur'an and science

According to Herriot (2009:2), one of the distinguishing characteristics of a fundamentalist mindset is a dualist worldview that tends to dichotomize all phenomena. The centrality accorded a holy book that supersedes all other authority followed by a selective exegesis of this holy book is *sine qua non*. In the responses that follow, this frame of mind is manifest. Part of the objective with the questions (see section on “science and religion” in the interview guide) was to draw out responses which indicated some elasticity with regards to interpretation of religious texts i.e. the Qur'an and Haddith. As the responses show no such accommodation obtained.

As mentioned in the literature review, some Muslim exegetes such as Rahman and Ebrahim Moosa (Harrison, 2007:138) built upon Gadamer's hermeneutics to radically suggest that the Qur'an's message is predicated upon an audience of listeners who understand its text and engage with a performative revelation. Moosa, in particular, critiques many modern Muslims who fail to play such a dynamic role in the hermeneutic circle but “Instead many people read it like one reads a medical textbook or an engineering manual. So the Qur'an has been turned into a sovereign, passive, non-interactive text” (Harrison, 2007:138).

The responses elicited in this section are commensurate with such a reading. One detects a predetermined commitment to a reified interpretive model. There is a privileging of the Qur'an as an unassailable divinely revealed book which can brook no opposition, and serves as the final court of appeal. However, all this raises a welter of questions which it is beyond the scope of this research to consider. Few of the interviewees reflected on the dissonance between their at times dogmatic interpretation of the Qur'anic verses and scientific discoveries. For example, some responded that if science proved the Qur'an wrong then the original interpretation was faulty.

In the final instance, based on the interviews conducted in this study, it is concluded that there was no sustained autonomous inquiry (*ijtihad*) of the Qur'an or any genuine attempts at reconciliation with science.

### 7.1.1 Privileging the Qur'an

The question asked was “How do you reconcile scientific advances that challenge or contradict the Qur'an, for example?” Generally, the responses seemed to follow a pattern: a blanket denial of any scientific advances that may have challenged or contradicted the Qur'an, followed by an

unwavering affirmation of its perceived inerrancy by pointing to what is believed to be astounding proofs of modern scientific discoveries nestled in the pages of the Qur'an.

*I reconcile scientific beliefs that challenge the Qur'an by referring to the Qur'an. The idea of embryology was discovered in the twentieth century which is relatively new, whereas it had been documented in the Qur'an 1500 yrs ago. The embryo is so small that it cannot be seen by the human eye and needs a microscope which is an apparatus that has also been created long after the Qur'an was revealed. This is only one of the many scientific findings that have been documented by the Qur'an centuries ago, but only discovered recently by modern scientists. How could embryology have been discovered 1500 yrs ago unless it was an actual Deity that revealed this to mankind? (female, teacher).*

Unperturbed by the tautology in her reasoning the interviewee does not reflect on the fact that the very act of "documenting" such a finding in the Qur'an was predicated upon a certain reading or interpretation of the Qur'an. Another teacher almost echoes the same sentiment:

*In some cases they are locked in conflict but in most cases they are complementary because the Qur'an has answered many questions that left scientists baffled for many years. For example the stages of the development of the embryo was mentioned long before it was ever discussed in science books (male, teacher).*

Indeed, such responses, extolling the scientific miraculousness of the Qur'an, were common.

Another interviewee drew upon an example from astronomy: "Many interpreters of the Qur'an – *mufasir* – struggled to understand a verse where Allah swears by 'where the stars were' but scientists now understand that the light that we see from the stars is light which has been travelling for millions of years to get to us today" (male, lay teacher). It is such readings which drew some critique from fellow-Muslims (e.g. Loo, 2001 & Guessom, 2008) who were dismayed at *post-hoc* reconstructions that aim to pigeonhole indefinite Qur'anic utterances into modern-day scientific discoveries. As discussed in the literature review, Maurice Bucaille, a French surgeon, typifies this defective approach claiming that one could rely on the Qur'an alone to discover the Big Bang theory and the water cycle (Loo 2001). Furthermore, this *post hoc* reading is susceptible to the question: "Why was there no competent exegete to predict such a finding years ago?" Predictability is after all pivotal to the project of science.

Even when showing some sensitivity to the need for a rigorous hermeneutics, the lay teacher mentioned earlier, who drew upon astronomy, went on to claim new discoveries for the Qur'an:

*Part of this issue- how to interpret Scripture- is a very difficult issue and a lot of people have had problems with it and could be a minefield once you delve into it. In Islam, for example, "Qiyas" is one way of determining an issue by analogy. If you read the Qur'an, you will come across a verse that says that a day is the measure of 50,000 years. So in a way the Qur'an is telling you implicitly about the theory of relativity – that what would be a day for us is like 50,000 years in God's reckoning.*



However, that his worldview is not susceptible to any engagement with anything that calls his interpretive schema into question is evident in his statement, “My basic belief is that anything that is proved as a scientific fact will never contradict the Qur’an because I do believe that the Qur’an is the literal word of God. As such, I have no fears or worries in that arena” (Ibid).

As alluded to earlier, what is significant in the discussion so far is not the scientific validity of the Qur’an (which is beyond the scope of the topic here), but the reticence in even remotely conceding the existence of variant interpretations. If British Muslims are to countenance the theory of evolution, it logically follows that the creation texts in the Qur’an will necessarily be at the centre of the discussion. However, if the mindset represented in this chapter is anything to go by, it will be a very difficult journey. One respondent maintained that any challenge to the Qur’an (as he understands it) must be on account of faulty translations: “In my own research of these claims of contradictions, I find that most of them are based on not properly understanding the Qur’an, but based on faulty translations or interpretations of translations” (male, teacher). Often the responses came as counter-questions and one-liners: Speaking of the challenges to the Qur’an, one interviewee asked: “What are they? Do you know of any examples?” (Turkish male, PhD student). Another stated: “Until today, I don’t know of any verifiable contradictions between the Qur’an and proven science” (male, teacher). The candid self-reflection exhibited in the next response was rare:

*I am going to be honest with you. Probably because I haven’t necessarily been looking, I really haven’t found much...Evolution has many holes in it anyway. Whether that is based on my religious bias which makes me less critical, I don’t know. Maybe it might be my religious bias which makes me determined to see holes in these theories but they are there and that is what matters* (female, postgraduate).

### **7.1.2 A dominant literalist hermeneutic**

In this section, responses to the question, “As a Muslim, do you believe that Allah could have employed the agency of evolution to bring about life?” are considered. To reiterate from the last section, at the core of the creation-evolution debate is a particular reading of the creation texts. In chapter 2 & 3 a case was made to the effect that Muslim loathing of evolution emerged in the interstices of debates between anglophile liberals and the traditional religious authorities. For many Muslims, the iconoclasm of Sayyid Ahmad Khan and other anglophiles was emblematic of the whole project of modernism which led to “the closing of the Muslim mind” (Tibi, 2009). There it was emphasized that any talk of open debate with regards to Muslims and the theory of evolution will need to address this resolute scepticism which is an offshoot of the encounter between modernism and Islam.

It will be recalled that Sayyid Ahmad Khan accepted Darwinian evolution. “He interpreted the Qur’anic statement that “semen” or “seed” is the nucleus of life as a metaphorical illustration of the primeval movement of life emerging from inert matter” (Lumbard, 2004:88). Khan, though, was maligned as an ally of the English out to undermine the integrity of Islam. It is to ameliorate such associations with a westernizing agenda that I sought to conceptualize the question on evolution within the framework of an act commensurate with Allah’s omnipotent prerogative.

Once again the overwhelming majority of responses took a familiar route. Some made attempts to discredit the theory of evolution as pseudo-science; others felt the intermediate forms of humans did not glorify God; still others responded with a curt no, while most came back full circle and invoked the creation texts in the Qur’an.

*I believe very strongly that Allah predetermined all life forms to have a specific form and DNA. Species could never mingle or morph into some hideous creature like the so-called Neanderthals or other intermediate fossils. How do these disfigured half-humans glorify Allah? Humans were created whole and separate from the dawn of time and have never changed an iota (male, A-levels).*

One lay teacher opined that God ought to be easily grasped by humans in order to be appreciated and glorified. To his mind, the astronomical ages involved in the machinery of evolution would conceal God from human apprehension making it culpable in promoting atheism. This statement would prima facie suggest that this individual believes in a young earth hypothesis. A follow-up question revealed this not to be the case. It may be interjected here that none of the respondents believed in a young-earth hypothesis. His contention basically was that current life forms, each distinct and separate, agrees with the creation text of the Qur’an. An Indian teacher quoted a text from the Qur’an to undergird the concept of creation *ex nihilo*: “It is not without the will of Allah that things occur. However, it states in the Qur’an that Allah created life and that when he wills for a matter, he just says ‘be’ and it is.” Significantly, one cannot detect any ambiguity or tension with reference to this issue. The interviewees have long settled in their minds that the literalist paradigm is the hegemonic arbiter in debates of this kind. The example elucidates this:

*As far I know the Qur’an, it doesn’t say that we were created from a single cell, but that we were created male and female, so I wouldn’t believe that....I know that they claim that intermediate fossils have been found but I don’t know enough to say something about it. As I said earlier, we may have had bigger feet as some footprints have shown more hair and broader jaw-lines, but we didn’t evolve from animals. I don’t think we were a different species or half-animals (female, postgraduate).*

As in the quote above literalist interpretations are often mistaken for a process of autonomous reasoning. The interviewee concedes ignorance in relation to the intermediate fossil finds but

proceeds to weigh in with “I don’t think we were a different species or half-animals”. As mentioned earlier, some were unwilling to elaborate: When asked, “As a Muslim, do you believe that Allah could have employed the agency of evolution to bring about life?” one teacher curtly responded “No”. The response of one interviewee may reveal the fear at the heart of the matter.

*Let me state that ultimately my faith in such complex issues rests with what the Qur’an says because if I choose to side with science I will find myself continually flip-flopping due to science’s constantly shifting nature. I have taken a stand with the Qur’an and am certain that when the dust settles, creationism will triumph (female, A-levels).*

Revealingly, she subsumes both religion and science under the word “faith”. There is an acknowledgement of the challenge science poses to religion – a menacing challenge. She pledges allegiance to Islam because of “science’s constantly shifting nature”. This would resonate with the words of imam 3, “I’ll tell you the fear - the fear of Muslims that if they believe in evolution that would disprove the Qur’an, or disprove Islam, and they would find themselves agreeing with the likes of Dawkins.”

### **7.1.3 Views of imams**

As mentioned earlier, the analysis of the views of the imams turned up some significant insights lending succour to the discussion in the literature review. In Chapter 2 (see 2.3), Muslims like the aforementioned Bassam Tibi (2009) contended that autonomous inquiry and critical investigation was clearly woven into the fabric of Islamic thought in the “Golden Age”. Discussions in that chapter clearly unravelled rudimentary acceptance of evolutionary belief in one form or the other. Ehsan Masood (2009) writes about Muslims who speculated about the theory of evolution as early as the ninth century CE. Based on this, it was suggested that some form of epistemological openness (as in the Mu’tazilite tradition) was a vital ingredient in the advances made during the “Golden Age”.

The imams’ responses can be grouped into two categories: imams 1&2 versus imam 3. Whereas the first two imams were highly critical of the claims of science, especially the theory of evolution, imam 3 extolled it profusely. When asked how he would respond to challenges from science to the Qur’an, imam 1 stated, “Let us not forget that science has often been wrong. Just think of the Piltdown man hoax which was actually revealed by evolutionists themselves”. Imam 2 criticised those who claim the Qur’an is wrong for claiming the sex of an unborn child is a mystery known only to Allah (Guessoum, 2008:413). His apologetics aligns with the earlier ethos of the lay members:

*The verse could not be referring to knowing the gender of the embryo because that would be easy to disprove – criminals could cut open the womb of a pregnant woman to discover the gender of the embryo easily disproving the Qur'an (Imam 2).*

Imam 3 believed the Qur'an was in harmony with science – including the theory of evolution. Commenting on the odd collaboration between Turkish Muslim creationists and their American counterparts, he states:

*It's a case of my enemy's enemy is my friend. There was no such collaboration between Muslims and Christians in this field before recent times. It is true that Muslim scholars in the "Golden Age" were ahead of their time adumbrating the theory of evolution by centuries. Yes, they did not feel that rationalism was a threat to their faith but flourished because they believed their faith actually spurred them on to new inventions and discoveries. Al-Jahiz, Ibn Khaldun and other medieval scholars clearly were propounding an early version of the theory of evolution which led John William Draper to say the theory of evolution was actually the Mohammedan theory of evolution. Harun Yahya has no scientific credibility. He is just a populist in the same league as Zaki Naik (Imam 3).*

Although interviewed separately with no knowledge the other was being interviewed, the response of imam 2 mentions Ibn Khaldun, albeit rejecting his alleged evolutionary beliefs:

*I guess Muslims do not reject the theory of evolution in its entirety. We cannot, however, accept the part about a shared ancestry with apes and lower forms of life. Some Muslims state that Ibn Khaldun believed in evolution but that is propaganda promoted by some orientalist calling it the "Mohammedan theory of evolution". My question to such arguments is how does this make the discussion scientific...it seems more like a socio-historical discussion? As I mentioned earlier, Muslims, unlike some Christians, do not reject the entire theory of evolution wholesale, but the part about monkeys to man is non-negotiable (Imam 2).*

The exchange above resonates with the discussion in chapter 2.3 where the trajectory of the decline of the *falsafa* (philosophy) liberal school and the ascendancy of the *fiqh* school (jurisprudence) is traced. Tibi (2009) and other Muslim scholars like Sardar lamented the suppression of critical inquiry at the hands of orthodox forces beginning with al-Ghazali down to the current global proliferation of Wahhabism. This feud was evident in the responses between imam 1 and imam 3. Imam 3 asked me if I was familiar with Ziauddin Sardar and suggested I read more of his writings. When I mentioned Sardar in passing to imam 2, he responded by labelling Sardar a socialist, liberalist and sensationalist who has no qualifications to pronounce any opinion on Islamic theology. The issue of Allah transforming some humans into apes and pigs mentioned in chapter 5 and 6 does not need to be laboured here. Imam 1 felt it an exercise in futility to discuss the issue of whether Allah could have employed evolution to spawn life. "I don't want to engage in hypothetical constructs on an issue where the Qur'an is quite clear. We have no support for such a speculation in

the Qur'an. To attempt at a guess would only be fruitless." Imam 2 also expressed some frustration with the topic given what he perceived as other pressing world problems:

**Interviewer:** *What about those who refer to verses that state everything was made in stages which they believe implies evolution?*

**Interviewee:** *That is true but has nothing to do with evolving from monkeys. I don't understand this obsession with monkeys. Well they say that the human DNA strand is 98% similar to that of apes, and that we have junk DNA in our genes. This is supposed to be irrefutable proof of evolution. This can point to a designer who used a common design just as well. If certain genes in humans are switched off but were switched on in animals it doesn't mean de facto that one came from the other. There are scientists who are aware of this argument but are not convinced enough to be evolutionists. How does all this enormous focus and waste of resources actually help the world? How is it beneficial to the state of the world problems to continue to preoccupy ourselves with this controversy when we have more pressing problems of poverty and injustice? (Imam 2).*

## **7.2 The Big Bang, Islam & methodological naturalism**

How does a religious worldview (Muslim creationists in this instance) negotiate the demands of neutrality when undertaking scientific inquiry? This principle of neutrality is referred to as scientific naturalism or methodological naturalism (see discussion in chapter 3.3). In other words, do we see attempts to safeguard this principle when doing science or is a religious worldview constrained to invoke God as the necessary causal agent? Armed with this query interviewees were asked "Unlike creationist Christians, Muslims embrace the Big Bang. However, some scientists, such as Stephen Hawking, have stated that the laws of physics sparked creation without the need to invoke God. How would you respond to this?"

### **7.2.1 God as necessary agent.**

None of the interviewees make a demarcation between the constraints of methodological naturalism and the principles of faith. The responses do not suggest any sensitivity to the procedural principle of neutrality built into the scientific endeavour. Respondents reasoned along three lines: that the Big Bang necessitates God as the agent of causation; what can be described as the "Goldilocks factor" which posits that just like the tale of Goldilocks and the three bears, the judicious design of the universe appears just right for life (Davies, 2006) and, finally, attacks maligning Hawking himself. I turn to the first:

*There is a verse which says "Do not the Unbelievers see that the heavens and the earth were joined together (as one unit of creation), before we clove them asunder? We made*

*from water every living thing. Will they not then believe? (Qur'an, 21:30)" In terms of what sparked it, this is part of the tactics of the evolutionists which is to say that there was no divine intervention behind it (male, lay teacher).*

The interpretive schema can be summarised as, "The Qur'an states that Allah was the agent behind the Big Bang ergo it is duplicitous to deny divine causation". Within such a framework, then, science is perceived as an appendage to religion - a servant whose solemn duty it is to "corroborate" statements in the Qur'an. No deference is given to the fact that scientific discoveries have often proceeded with no religious agenda goading them, but a tacit acknowledgement to the effect, "We will follow the evidence wherever it leads". The Big Bang is acknowledged but as a secondary issue to God's creative power, as in the next quote:

*Who or what was behind the Big Bang? Has anyone heard of fireworks or bombs going off without a human agent behind it? As a Muslim, I believe in the Big Bang but, more importantly, I believe that Allah ordered and controlled it. It is ridiculous to suggest that a random explosion neatly put the planets in orbit around the sun (male, A-levels).*

Religion, Islam in this instance, is incontrovertible and all learning must acquiesce to its statements as interpreted by the ummah. Religious rationale is the only plausible one: "I completely disagree. Our religion says that everything had a purpose and so to talk about the laws of physics accidentally guiding all matter to become what we observe today is frankly preposterous. How this kind of reasoning can even be called science is puzzling to me?" (female, A-levels). One interviewee argued that the testimony of the three Abrahamic faiths militates against the material world self-creating. She specified that, to her mind, Islam has not compromised on such issues although the same could be not be said for Christianity which she accused of compromising to abominable practices like homosexuality (female, undergraduate). For others, the taken-for-granted belief that the Big Bang was prophesied in the Qur'an was sufficient reason for rebutting Hawking's statement:

*There are verses in the Qur'an which support the Big Bang. So the Big Bang is possible as the Qur'an agrees with what science is claiming. So I am asking you - someone who lived in the 5<sup>th</sup> or 6<sup>th</sup> century - how did they have this kind of knowledge to make such an interpretation? Is it possible? (male, PhD student).*

When analyzing the interviews, it was apparent that the imperfection and waste in the world did not occur to any of the interviewees. I will not speculate as to whether this was deliberate or an oversight. Darwin wrote to Hooker, "What a book a Devil's Chaplain might write on the clumsy, wasteful, blundering, low and horridly cruel works of nature" (Darwin, 1856). Polkinghorne (1988:18) warns, "One must acknowledge that the world often presents an ambiguous face when we

seek in it to discern signs of benevolent design. Religious believers are sometimes prone to take too facile a view of its perfection”. Such a view is captured in the response below:

*I would respond to that by saying that God is the sublime, the greatest and perfection in the most resolute of ways, and if perfection was created from the occurrence of the big bang, than it had to be perfection that orchestrated it (female, teacher).*

Clearly, then, the Big Bang is only acceptable to these Muslims insofar as they perceive the Qur'an to be saying the same thing. Would that mean that they would have embraced the theory of evolution if the Qur'an sanctioned it? If so, then revelation (with its vagaries) is the supreme arbiter determining the interpretation of natural facts and not reason.

### 7.2.3 The “Goldilocks enigma”

Other respondents rebutted Hawking's statement pointing to the uncanny manner in which the universe seems fit for life. The view below encapsulates this stance:

*When I look at the universe around me, I find it to be the ultimate insult to say that all this came about by chance. Scientists use the phrase “the Goldilocks phenomenon” to describe the almost divine manner in which this part of the universe has been preserved – the right distance from the sun, the right distance from the moon. We are in the Milky Way which is a very quiet neighbourhood. All of this leads us to the belief that we are here for a particular reason, and we are here as observers to observe this divine providence that we have been given (male, lay teacher).*

Of interest is the equating of the bio-friendliness in the universe to the anthropic principle which differs from the “Goldilocks enigma”. The cosmologist, Brandon Carter is credited with inventing the term “anthropic principle” (Davies, 2006: x). Davies (*Ibid*) argues that this was a misnomer “giving the false impression that it concerned humankind”. Davies prefers the term “Goldilocks enigma” to explain the “fitness of the universe for life” (Davies, 2006:11). For many of the respondents, there is an unqualified assumption that the ultimate purpose of the Big Bang was human life:

*Yes, I embrace the Big Bang. It comes down to faith, however. I believe that nothing happens without God knowing and everything happens for a reason. To me there is no such thing as a coincidence. From the Big Bang, there came us. So there was a reason for the Big Bang. So there must have been something behind it (female, A-levels).*

Often, the law of probability (a favourite argument of ID proponents like William Dembski) would be invoked on a much simpler scale, “And when one reads how finely-tuned the Big Bang was – we

cannot count the number of decimals and 0s which had to be precise in order for the universe to emerge – that itself leads one to the conclusion that an intelligent being, a supreme being, had to calculate this (male, lay teacher). Similarly, “Design indicates a designer. The universe is far too perfectly balanced to have come about by random events” (male teacher). For the religious mind, existence without an arrow of directionality is unthinkable:

*The big bang theory is closely related to what is partly described in the Qur'an...The big bang couldn't have occurred without there being someone to invoke it. To say it may have occurred by accident is to believe that nothing is controlled and that nature works with no end goal (male, teacher).*

Finally, a few respondents were slighted by Hawking's statement and invoked the higher authority of the Qur'an:

*In my opinion, Hawking is just another atheist who is speaking his own mind. Nothing of what he says will ever influence me. I believe the authority of the Qur'an is greater than his authority. Ultimately, it is a matter of what one believes beforehand. Hawking has decided to disbelieve the existence of God and so he will find ways to make everything fit into this bias (male, A-levels).*

This section will not explore the views of the imams. The objective was to consider the manner in which the interviewees', as Muslims operating in a secular country, responded in light of the scientific principle of methodological naturalism. Imams are expected, by virtue of their roles as official representatives, to adopt a more conscious religious posture. However, of note with regards to the discussion in the literature review (a topic addressed in the next chapter), is the view of imam 3:

*I think Hawking forgot what he wrote in the last paragraph in the “Brief History of Time”. Of course, Dawkins is very pleased with this but Dawkins has served to polarise the debate and promote an atheistic agenda which compounds the problem (Imam 3).*

In summary, interviewees' evinced an unwillingness to attempt any “fusion of horizons” (to borrow from Gadamer) where the constraints of science and religion were interrogated and reconciled. The epistemological flexibility, which some argued, augmented the Islamic scientific successes of the “Golden Age” cannot be detected. Sardar (2007) moaned the constriction of intellectual space precipitating a climate where Muslims revisited the question of knowledge and its legitimate parameters in the 19<sup>th</sup> century. He argued that the ensuing humiliation and subservience brought on by colonialism spawned a defensive “enclave mentality” in which knowledge (*ilm*) was narrowed down to religious knowledge alone. In this study, as the responses indicate, it appears this constriction of knowledge persists. What has been demonstrated in this section, I argue, is that the same constricted mindset actually underpins the acceptance of the Big Bang. In other words, it was



not the principles of scientific inquiry constrained by testability, publicity, empiricity and fallibilism (Audi, 2009) which effectuated this acceptance but, significantly, an “enclave mentality” in which only that which the Qur’an legitimizes – as interpreted by a literalist hermeneutic – is considered science. This provides the milieu in which the rejection of the theory of evolution must be understood.

In what follows, responses aimed at exploring the manner in which Muslims implement the demands of *tawhid* in a secular western country like Britain are considered. This is, in essence, an extension of section 7.2, only with a vital religious concept guiding the discussion.

### **7.3 Tawhid and non-overlapping magisteria**

It can be argued that, unlike Christianity, the Islamic principle of *tawhid* perhaps may be the reason Islamic societies have not witnessed what Max Weber described as a “disenchantment” of the world. Christ’s injunction to “render to Caesar what belongs to Caesar and to God what belongs to God” provided a template which gradually led to the current separation between church and state. The Islamic world, true to the principles of *tawhid* resisted any autonomous pockets of existence because every branch of knowledge, natural or social, is necessarily recruited in the overarching objective of testifying to the principle of *tawhid* – or divine unity which is captured in the statement *La ilaha illa’ Llah* (There is no god but God) (Bakar, 1999:1). Thus, it is an aberration in Islamic ontology to conceive of an autonomous domain where knowledge can be pursued independently.

As discussed in chapter 2.5.1, Muslim rationalists such as Bassam Tibi (2009) contend that the predicament of Islam with modernity is, in essence, a conflict of two worldviews – the former grounded in *tawhid* and the latter in a Cartesian epistemology. With this brief background, the interviewees were asked to respond to the question, “The Islamic doctrine of *tawhid* or unity of God demands an approach which sees the world as a united whole emanating and dependent on Allah. How can a Muslim reconcile this with the demands of science for autonomy and separation?” The responses show that safeguarding the supremacy of *tawhid* and implementing it is of paramount concern. However, respondents were divided down the middle when asked whether this is implementable in practice in Britain. Seven of these interviewees’, who felt that *tawhid* was difficult to implement in Britain, forwarded reasons ranging from structural constraints to the inhibiting discourse of separation between religion and state. I will first look at this group.

### 7.3.1 Challenges of implementing *tawhid*

A Somali lay teacher underscored the utmost importance of observing *tawhid*: “Any professing Muslim would feel that *tawhid* is by far the most important and superior principle in existence. So anything other than that would be subordinate.” He opined that practising *tawhid* as a scientist in the past was not a problem as most Muslim scientists were simultaneously accomplished theologians. He was aware of the difficulty of consistently observing *tawhid*: “There probably are some environments which are very hostile to *tawhid* in the West but, at the end of the day, a sincere Muslim will practice *tawhid* regardless of where he finds himself... I do believe in the Shakespearean principle of to thine own self be true.” He insisted recurrently that *tawhid* is the overriding principle in Islam and Muslims need to be cognizant of the omniscience of God reasons which warrant practicing this principle irrespective of the society or antipathy faced. He explained that conspicuous practices such as prayer actually count as “*dawa*” or proselytizing which is part of *tawhid*.

Another interviewee acknowledged the discourse of separation between religion and state in the West and expressed an opinion constrained by concerns for pragmatism.

*I think it is a very personal thing. Someone outside may have a different way to do it as opposed to someone here in London. I think the important thing is that you are God-conscious in a fundamental way which is the point. In a western secularized society I don't think there is necessarily a place for religion to dictate or instruct policy. I do think the state and church should be separate to be pragmatic – you know it is the world we live in (female, postgraduate student).*

She added that according to employment laws in the UK Muslims have the right to request time for prayer. She concluded: “Clearly there are some challenges.” One other female had a more pessimistic view stating that a true Muslim could not fulfil *tawhid* in a society such as Britain because it simply is not a Muslim country. She considered it regrettable that the discourse of secularism did not permit her to say “*Insha allah*”, for example, and added:

*This may come across as narrow-minded but our religion actually commands us to live in a Muslim country precisely for such reasons as the principle of *tawhid*. When I travelled to Somalia and Dubai, for instance, I was constantly reminded of the *salat* (prayer time) as the *adhan* (call to prayer) was made. This definitely facilitates *tawhid* whereas, in the West, there are many distractions and obstacles to raising children as Muslims. The British are the majority here and if they say something hostile about Islam there isn't much we can do about it (female, A-levels).*

The Enlightenment, among others, created a climate conducive to considering the theory of evolution, for instance. With regards to the creation-evolution debate one wonders if some sort of

relaxing of the all-pervasive conceptual schema of *tawhid* will be a precursor for a serious debate within the Islamic world. Ward reminds us of the origin of the theory evolution:

So, evolutionary thought, the thought of change and progress in history and in the development of life on earth itself, developed as a religiously imbued intellectual movement in eighteenth-century Germany. Of course, belief in evolution and in creation are compatible since evolutionism originated in the context of a revised view of creation as progressive self-revelation of God, of Absolute Spirit, in the genesis and development of intelligent life forms (Ward, 2008:62).

Some of the responses from those who felt that *tawhid* was at loggerheads with western society seemed to suggest a reluctant acceptance that *tawhid* must be reconceptualised. The interviewee below did not mince her words:

*It is possible to separate politics and religion, for example. If one is a lecturer, for example, there is no need to mention the name of Allah intermittently as many Muslims do in the Crescent. I actually concur with the West in this matter without becoming secular or abandoning my faith. An MP who enters the Parliament and declares that God spoke to him in a dream would rightly be perceived as mad. Extremists do such things. If one must embrace such a worldview, it is better to stay in your own country and not migrate to the West (female, undergraduate).*

Another female who works in the transport sector acknowledged the difficulty of fulfilling the religious duty of *tawhid* in Britain. She asserted that had Britain been a Christian country it would have been easier to implement *tawhid*. She reasoned that Muslims in the West are forced to adopt a stance of compromise which, although not genuine *tawhid*, ought to be acceptable because of the structural inhibitions. One respondent, annoyed with the all-pervasive secularism, stated, “I really ignore the western demands of separation between state and religion. This is because religion is always and everywhere more authoritative than secular affairs.” (male, A-levels).

In summary, these interviewees affirmed the primacy of *tawhid* but simultaneously felt compelled to adopt various strategies to cope with the discourse of separation between state and religion in Britain. These spanned the gamut from outright defiance, a reinterpretation of *tawhid* (e.g. private “God-consciousness”) to capitulation. As one interviewee explained:

*To navigate and reconcile the two is incredibly hard, especially for a Muslim. Not just for a Muslim, but a Muslim living in the West. It is not only unavoidable but impossible because in the Islamic culture as opposed to the Western culture we have to pray on Friday, for example. While in the West, Friday is a work day. So it is irreconcilable. There is the story of a blind man in the Kitab (Qur'an) who tells the prophet that he cannot see the Masjid (Mosque) and so he cannot pray. The prophet responds that there are no excuses so he has to pray (male, undergraduate).*

### 7.3.2 Arguments for the implementation of *tawhid*

A slight majority argued that *tawhid* was non-negotiable and must be implemented regardless of the impediments. This category refused to consider issues of context such as the separation between religion and state. The same candidates divulged opinions which also leaned more consistently towards an idealized version of Islam. Their views were proselytizing, prescriptive and universalistic. In true *tawhidic* fashion, the interviewee below envisages Sharia Law touching every aspect of the UK.

*Personally, I don't think religion should be taken out of society. Religion has a lot of good rules and good guidance – not just Islam but all religions. To say that English Law should not pick up some rules from Sharia Law is to say, why not? Sharia Law should be picked up. Murderers – maybe they should be killed; paedophiles should be removed from society utterly rather than reintegrate them at all. So tawhid is possible and should be implemented until the day it can be proven that God does not exist. With regards to practical tawhid like praying five times a day and keeping down a job, a person should be allowed to perform his namaz (prayer) unless he doesn't do his job properly. The business concern can harmonize with the religious concern. A person who works in a bar and desires to perform his namaz (and doesn't drink because of his religion) should be transferred to another job to safeguard his religious sensitivities (male, undergraduate).*

As the literature review indicates (see chapter 2.5.1), Islamic ontology espouses a theocentric and holistic worldview. The contemporary western Cartesian rupture (a post-reformation phenomenon) is indeed antithetical to the perception of *tawhid*. There have been media headlines from time to time featuring calls for the implementation of aspects of Sharia Law in Britain. This call had the backing of, among others, the Archbishop of Canterbury, Rowan Williams, who argued that “adopting parts of Islamic Sharia law would help maintain social cohesion” (BBC News, 2008). Lewis (2007: 6) reminds us that the frustration of some Muslims living in Britain is compounded by the fact that traditional Islamic jurisprudence (*fiqh*) did not envisage minority Muslim communities living in non-Muslim countries. For some, the West was perceived as an anti-Muslim bloc that vilified Islam. *Tawhid* was defended through such a lens:

*I think Muslims should resist the demands of separation between science and religion or any other topic because you cannot deny who you are or what you believe. It's like a person's gender. It cannot be hidden and so our faith cannot be hidden either despite what society wants us to do. Especially in these days when Islam is constantly being attacked – just think of terrorism etc. I think they are particularly targeting Muslims to be silent compared to the other religions. Tawhid says that the world is united as one, and so if Allah says the world is united, I don't think anyone has the right to oppose that. This means that we cannot even separate the world into western and eastern spheres (male, A-levels).*

Others were concerned for the disenchantment of the world. One interviewee stated, “I think we can harmonize the two in this modern world. In a world of machines and technology, we need the spiritual to be visible rather than isolate it. God should be everywhere; that’s what I believe” (male, health worker). As was often the case, those working as teachers expressed views that were more aligned with traditional orthodox views. “Islamic belief necessitates that we do not make a separation or distinction between the science of the world and Allah. Muslims believe that Allah is the One who originated the concepts of science and the way that the world works. Anything contrary to this is belief in Islam” (male, teacher). The answers were often punctuated with statements about God’s sustenance over all creation which, in their view, requires humans to prostrate and worship him.

*The holy Qur’an mentions that man was created for nothing else but the worship of the Almighty. So as his slaves, we are dependent upon him as the sole provider of our substance in life. This includes intelligence, food, water etc (male, teacher).*

Finally, one teacher expressed the view that the interdependence of all life on earth is a reflection of the principle of *tawhid* which proves the existence of Allah.

*The best way to reconcile this it to go back to the grass roots of creation and ponder what is around us all. How cleverly everything in this world is intricately intertwined and dependant on each other! Animals need the earth for survival; we need animals and the earth for survival. How can a pure autonomy exist in this case? If science proposes and advocates separation and autonomy, than this principle is justifiably refuted by what is divinely ordained through the understanding of Tawhid (female, teacher).*

In summary, although all the interviewees affirmed the pre-eminence of *tawhid*, about half acknowledged the challenge of implementing it in a secular society such as Britain. The other half considered in this section believed that implementation of *tawhid* is a sacrosanct duty incumbent on all Muslims everywhere, including Britain. Thus, it is argued, the concept of *tawhid* gives expression to the acrimony experienced in the confluence between Islam and the West. Stephen J. Gould (1999) suggested the NOMA model as a solution to the sometimes cantankerous relationship between science and religion. For Gould, science and religion are two prominent rocks of ages which operate according to different principles and pursue different goals. They are “non-overlapping magisteria”.

NOMA seeks no false fusion, but urges two distinct sides to stay on their own turf, develop their best solutions to designated parts of life’s totality, and, above all, to keep talking to each other in mutual respect, and with an optimistic forecast about the value of reciprocal enlightenment. In other words, citing Churchill’s aphorism, to “jaw-jaw rather than to war-war” (Gould, 1999:211).

However, as the responses above seem to indicate, such a binary proposition as the NOMA-model would be unappealing to Muslims. As the literature review illustrates, Islam is a totalizing, all-encompassing religion. The Muslims interviewed, it must be kept in mind, are mostly born and bred in the UK. Besides, 17 of the 25 candidates have university degrees from the UK. As discussed in chapter 5.1.1, the more highly educated the interviewees seemed to harbour views that would be considered more parochial in the West.

#### **7.4. Between Britain and Saudi Arabia**

Earlier it was suggested that the current intransigence with respect to the theory of evolution may perhaps need to be situated in an analysis of the prevailing zeitgeist of *fiqh* orthodoxy in the Muslim world. The conditions emerging in the West in the Enlightenment context created a climate in which religion was severed from profane matters. Thus Alastair Campbell famously declared, “We don’t do God” (Quoted in Beattie, 2007:6). Such a statement would be unthinkable in the Islamic world. Furthermore, the Deist metaphorical notion of God, as the absentee clockmaker (universe), is alien to Islam, according to Bakar (1999). If these responses elicited from Muslims educated in the UK are anything to go by, it is tempting to conclude as imam 3 stated with a sigh,

*I don’t think the Muslim world is ready for a debate on the theory of evolution yet. I have said that Muslims need to transcend the madrasah level of intellectual debate in order to be taken seriously. The problem we have today is these Saudi clerics who interfere in the debate issuing fatwas to silence dissenting opinions. Evolution is not a matter of iman (belief) or Kufr (unbelief) and people are free to accept or reject it.*

The mention of the Saudi clerics is significant. The West today finds itself in a unique situation with reference to its Muslim citizens. They are confronted with the challenge of dealing with British citizens who, because of the concept of *ummah* (transcendental community), share more in common with clerics in Saudi Arabia than the state and social apparatus in Britain (see chapter 1.4.1). The “cartoon controversy” is a case in point. As referred to earlier, although a Scandinavian issue, the Norwegian Foreign Minister, Jonas Gahr Støre, made a public apology to Muslims while travelling in the Middle East during the height of the cartoon controversy in 2005.

In relation to the creation-evolution debate, then, British educators must understand the transnational and phantasmagoric nature of the challenge they have locked horns with. Audi

(1999:36) drew on two touchstone principles to defend the teaching of evolution alone in the classroom: methodological naturalism and the secular rationale which posits that any constraint on human conduct must be justified under the framework of liberty, equality and neutrality which is commensurate with the aspirations of a liberal democracy. The reality on the ground, however, is that some Muslims are cognitively and affectively more in tune with the ethos of a country like Saudi Arabia – a country where the principles that Audi (1999) outlines are not valorised. The impulses from the wider *ummah* will, obviously, impact upon the future course of the creation evolution debate in Britain.

## CHAPTER EIGHT

*Either half my colleagues are enormously stupid, or else the science of Darwinism is fully compatible with conventional religious beliefs—and equally compatible with atheism, thus proving that the two great realms of nature's factuality and the source of human morality do not strongly overlap (Gould, 1992).*

### 8.0 Introduction

This chapter seeks to approximate the interviewees' perception of the influence of ideology upon the theory of evolution. In chapter 3, it was indicated that sundry philosophical and ideological investments had been historically connected to the theory of evolution by individuals who were either well-meaning - but deluded - or deliberately unscrupulous. In other words, if the arguments against evolution forwarded by the interviewees are erroneously informed by ideologies unrelated to the scientific theory of evolution (what Alexander, 2008:174,175 refers to as “philosophical barnacles”), it is argued that a consideration of these ideologies/biases is salutary.

In the first section (8.1), the extent to which evolution is perceived as dictating the espousal of an atheistic worldview is considered. In this regard, the interviewees were asked: “Some people of a religious persuasion reject evolution on the grounds that it promotes atheism. Harun Yahya (1999:16), for example, claims that Darwin invited people to abandon their religious beliefs by denying the creation. How would you respond to this?”

The second question explored in section 8.2 is, “The phrase ‘survival of the fittest’ has been taken by some religious people to imply might makes right. Do you see evolution as condoning such an ideology?” As the responses demonstrate, this question triggered the need for a theological reconciliation between what the interviewees' felt was a naturally occurring phenomenon – albeit interpreted differently - and the belief that God is compassionate.

Finally, section 8.3 assesses responses to the question, “Do you see any link between the theory of evolution and race ideology?” Often the interviewees interlaced their responses to other questions in the interview guide with responses that belonged in this chapter. Those views are also appropriated in this chapter. Some implications for the academic study of the theory of evolution are discussed. It is contended that if scientists and educators are to mitigate some of the hostile views towards evolution, particularly among Muslim religious creationists, there is a need to situate evolution within the framework of the philosophy of science to distinguish between science and non-science as advocated, among others, by Karl Popper.



## 8.1 Evolution and atheism

A pivotal issue for McGrath (2007) is Dawkins' contention that a Darwinian theory of evolution necessitates an atheistic worldview. He is concerned with the manner in which Dawkins makes the difficult transition from "*biology to theology*" (McGrath, 2007:11). McGrath (2007) goes on to consider the religious views of Darwin and concludes, "It would therefore be extremely unwise to draw any confident conclusions on these issues" (McGrath, 2007:73). Despite such warnings, it appears that, in the public consciousness, there is the unwarranted perception that the theory of evolution is antithetical to religious faith. Some even further believe that evolution and science in general have supplanted God - that science has become "God's Undertaker" to borrow from the title of John Lennox's (2009) book (Lennox, of course, rebuts this proposition).

As the responses below indicate, the vast majority of the interviewees were convinced that evolution and faith in God were polar opposites. Only 3 of 22 interviewees (excluding the 3 imams) distinguished between what constitutes for science and what is ideological. Significantly, these respondents point to the virulent atheism promoted by the likes of Dawkins to substantiate their assertion. It appears to be this dogmatic commitment to a parochial scientific naturalism on the part of some like Dawkins as the only permitted worldview which underpins the sometimes equally dogmatic responses from creationists.

It is clear – as others have observed (e.g. McGrath (2007); Beattie (2007); Haught (2008); Lennox (2007)) that the discussion, at times, is no longer one about the scientific issues but a boisterous exchange between two fundamentalist positions. Dennett (2006) seeks to "break the spell" whereas Dawkins seeks to dispel the "God delusion (2006)". Conversely, the majority of the views below resonate with the equally fanatical pronouncements of Qutb (1981) and Al-Afghani, among others, (see chapter 2.5) who could only see the theory of evolution as an advocate of godless materialism. The lines have been drawn in the sand and each side defends what it perceives to be the only grand narrative worth the name. In what follows, I will first consider the opinions of those who equate evolution with atheism and later consider the few dissenting voices.

### 8.1.1 Conflating evolution with atheism

*I believe this to be true [evolution is atheism], as it is evident from what prominent scientists promote. Take for example Steven Hawking and his recent comment about heaven and hell being a "fairy tale"; also Richard Dawkins' book "God Delusion" where he uses evolution to promote atheism (female teacher).*

Most of the respondents, it must be emphasized, did not have a background in science. It can be argued that to their minds the non-scientific statements of the likes of Hawking and Dawkins are mistakenly perceived as scientific. Implicit in the response of the interviewee above "...what prominent scientists promote" is the perception that prominent scientists have colluded in disseminating atheism as a necessary denouement of the theory of evolution. The interviewee below has travelled widely in the West and debated many secular people. Based on his encounters, he stated:

*As I said earlier, I haven't come across that many evolutionists who at the same time did not happen to be atheists. There is something there. It seems to go with the job description. Unfortunately, that is one of the biggest turn offs for most people of a religious persuasion. They feel that evolution denounces their faith. I live in a country which has a very strong secular ideology. They feel threatened by Islam. They feel that they have thrown off the shackles of Christianity a while back. Now they feel that Muslims are the new threat. So my answer is yes – you do get the sense that evolution promotes atheism or that most evolutionists happen to be atheists. So this is a huge minus when it comes to evolution (male lay teacher).*

Those in this category recoiled from the thought of being lumped together with evolutionists because, in their view, this was identical with atheism. It is noteworthy that this respondent refers to the demise of Christianity at the hands of secularism. It appears that he implicates the theory of evolution in this battle to throw off the shackles of Christianity as he puts it. This would mean that evolution is seen as the handmaid of atheism. The fear one detects in such statements is that evolution, as the powerful ally of atheism, is now being concentrated against Muslims in the UK, and the West by extension. In a similar vein, another interviewee pointed to the arguments employed by atheists: "I definitely see an agenda behind the theory of evolution. In my view, the theory of evolution represents atheism. It is no accident that the atheists I have spoken to invariably bring up the theory of Darwin to rebut the existence of God" (male, A-levels). There is an echo of the fears expressed by Nasr (1999). To Nasr (1999), Christianity was undermined after it courted the forces of secularism of which the theory of evolution was one tentacle. Muslims are warned about this secular ambience in which various anti-theistic matrices flourish.

One respondent stated briefly, "It's my opinion that wholehearted belief in evolution is misguided and dangerous" (male teacher). The response of another interviewee was typical of many, "Any belief or theory that promotes atheism is considered as *shirk* (disbelief) and, as such, should be rejected. The most popular religions of our time, for e.g. Islam, Christianity and Judaism are based

on the existence of God” (male teacher). Significantly, the response did not see the need to justify whether or not the theory of evolution actually does invite atheism. That the two are synonymous appears to be a foregone conclusion. Not only did the majority consider evolution and atheism interchangeable, but they went beyond this discussion into a derogatory assessment of the implications of evolution.

*I consider evolutionists to be people who are seeking for answers to the big questions of life. They make pretence of having evidence and settling the issue, but I believe they are deceiving themselves. I am also inclined to believe that they are prejudiced against God and constructed a theory which leaves God out. They basically think they are a “god” of their own. Their philosophy is actually quite pessimistic – a Big Bang happened by accident, life suddenly and without purpose started without any guidance or higher purpose and evolved into the marvellous complexity we see today. This is a religion itself. Fortunately, religions are still growing today and are under no threat from Charles Darwin. I just think they were looking for a theory which would silence their own God-given consciences. I believe they are lost souls (female, A-levels).*

What one observes in such responses is a mindset which appraises every statement according to its commensurability with the concept of God as they understand it. If statements – especially those weighing in on the issue of origins – do not fit this mould, they are considered *shirk* (unbelief) and happily ignored. For some, having concluded that evolution was a religion, it became a matter of choosing between 3 beliefs – God, evolution or just atheism without evolution.

*I do think that Darwin was promoting atheism and I do think it was Darwin’s intention to make people abandon their beliefs. But if someone wants to change his beliefs and become an atheist they have the right to do so. So if someone wants to change their religion from Islam to Judaism, they have the right to do so. Darwin had every right to come out with the theory of evolution and you cannot blame him for taking people away from their religion. You can be an atheist without even believing in evolution (Somali male, A-levels).*

One teacher was inclined to believe that since Darwin’s findings did “contradict” Christianity, he indirectly invited people to abandon faith in God. He concluded, “I feel that believing in evolution instead of creationism is a form of atheism”. As mentioned earlier, however, the majority were crass in denouncing evolution as an anti-God agenda.

*Yes I believe in the proposition above because Charles Darwin and the entire cadre of Enlightenment thinkers desired to destroy religion and the concept of God. Take Nietzsche, for example, who proclaimed that God is dead. They had an anti-God agenda (female, undergraduate).*

Although few, there were opinions which did not see a necessary link between atheism and Darwin. This thread is followed in the next section.

### 8.1.2 Decoupling atheism and Darwin

*Theories are promoted by people. People have their emotions and ideological slants that are part of the ideologies they are advocating. It is possible Darwin's distaste for religions pushed him to his "discoveries". I would separate the issue. The implication of for religions should not be part of the theory. If people believe in evolution then they will naturally leave religion - that is of course if evolution has any credibility. Otherwise, pushing people away from religion is cheating and creating a shortcut. People like Harun Yahya should realize that people have a choice to believe in creation or not. Those who are convinced of creation will naturally gravitate towards religion (male teacher).*

The statement above actually has one foot in both camps – that evolution is a call to abandon faith and a call to disassociate evolution from atheism. Although the teacher cited above calls for a separation of the two issues, he states that “If people believe in evolution then they will naturally leave religion - that is of course if evolution has any credibility”. Most of the responses in this category bore hallmarks of this conflicted way of reasoning. A Somali female argued that Darwin wasn't preoccupied with religion at all but “It is Richard Dawkins who misuses evolution and plays it against religion”. Despite this balance in her response, she goes on to say, “I think evolution more or less takes God out of the equation in saying that it just happened; it's just a coincidence and here we are”. She appears to make a distinction between the theory of evolution as deliberate ideology and the implications that an objective student would draw from evolution. So, although separating Darwin and his beliefs, she believes that the scientific theory of evolution would lead one to a denial of the existence of God. Another respondent pointed to the existence of theistic evolutionists to counter the necessary nexus between evolution and atheism: “No, I don't think evolution necessarily promotes atheism because you have people who believe in God and yet believe in the theory of evolution...But having said that, obviously, it does play a significant part, but it's not necessarily so” (female, postgraduate).

In conclusion, only two respondents, although opposed to the theory of evolution, rejected any linkage between Darwin and atheism.

*I find it very interesting that people equate evolution with atheism. In reality they are not. Darwin observed animals on the Galapagos Islands. He didn't say burn churches and mosques – long live the revolution. But somehow people equate Darwin with a modern-day Devil. Darwin didn't go out there and say “Hey everybody, don't believe in God”. The man only said that evolution exists and here is my evidence from the Galapagos Islands. He observed certain birds eating certain nuts and noticed that their beaks had adapted in size. It is thus ignorance to equate evolution and atheism. The people who have most to gain from*

*this are politically minded and want to rally people to their cause. These people exploit the issue for their own ends (male, undergraduate).*

*Darwin was making a discovery in good faith. I don't think he was trying to position himself to push an atheistic agenda. I think he was just exploring his science and going where it led him (male, health sector).*

Nevertheless, the majority of the respondents saw a link between evolution and atheism. Statements made by high-profile scientists such as Dawkins confirm such assumptions, in their view. That many atheists recruit the theory of evolution in undermining the existence of God is seen as further cementing this perception. Significantly, both sides are not wrangling about the science – or lack of it – behind the theory of evolution, but the ideological investments each side has distilled from the theory of evolution (erroneously, of course). In this sense, the whole debate is *non sequitur*. Each side basically resorts to engaging in a misuse of synecdoche – an aspect of the debate (which is not really central to the scientific theory itself) is made to pronounce weighty judgements on the whole topic itself. The literature abounds with statements reminding creationists and evolutionists that:

Evolution does not require a God, neither does it rule one out either. In this respect, it is no different from almost all other fields of interest. Evolution is no more atheistic than biochemistry, farming, engineering, plumbing, art, law and so forth (Isaak, 2005:35).

The second question posed under “evolution and ideology” was, “The phrase ‘survival of the fittest’ has been taken by some religious people to imply might makes right. Do you see evolution as condoning such an ideology?” The responses will be presented in the next part.

## **8.2 “Survival of the fittest”**

It is important right at the outset to clarify a few things with regards to this much-abused phrase. It was Herbert Spencer, not Darwin, who first coined the term to refer to what he saw as similarities between economic principles and biological ones as explained by Darwin (Letter 5140-Wallace, A.R. to Darwin, C.R.). In essence, then, the phrase is not strictly scientific, and certainly does not support the pejorative inference many (especially creationists) attribute to it. Even in popular parlance most people assume it refers to who is physically most robust; this is very different to the way in which biologists employ the term. Actually, most biologists prefer the term natural selection because this conveys the sense that natural characteristics or traits, which have their source in the genes, give rise to differential reproduction. The difference in reproductive rate generationally is salutary, and not who is faster, stronger or bigger.

The above has nothing in common with the widespread view that “survival of the fittest” means “might makes right” which was deliberately posed as a question in order to assess the responses – either confirming or rejecting this popular, yet incorrect, application. Creationists, particularly the “young-earthers”, have often castigated evolution by equating natural selection with “survival of the fittest”. They argue that the phrase lends credibility to the immoral idea that the strong have been favoured by nature to set standards to the detriment of the weak. This is called social Darwinism. As discussed in chapter 3.1.1, social Darwinism has been used to justify eugenics, racism and a host of other dubious objectives.

### 8.2.1 Evolution and social Darwinism

Significantly, there were only 5 interviewees who believed that the theory of evolution condoned the ideology of “might makes right”. This paucity in terms of support for the proposition indicates that many were able to distinguish between the scientific application – which they were not opposed to – and the erroneous misuse of the phrase. However, I will first look at the 5 respondents who supported the proposition believing that evolution does promote the concept of “might makes right”. One teacher replied:

*Many scientists are advocating this, for example, Randy Thornhill and Craig Palmer, who are evolutionary theorists. They state that “rape is another seed-spreading technique favoured by natural selection.” This is extremely dangerous as it gives criminals the carte blanche to do as they please (female, teacher).*

This teacher was familiar with Thornhill and Palmer’s unfounded assertion that sexual rape and violence is an evolutionary adaptation (see chapter 3.1; Sterelny, 2007:67, 70). As seen earlier in this chapter, she believes the number of scientists making such claims lends credence to the “might makes right” ideology. Seen through this lens, however fallacious, Nar Hossein’s objection to the manner in which Darwinism has been extrapolated to inform other branches of learning appears to carry some weight. Once again, the issue of correct representation of the theory of evolution becomes central. The question, “Who speaks for evolution?” becomes pertinent if Muslim creationists are to properly engage with evolution. Many in the evolutionary camp have, to their credit, rejected such invalid claims. As we have seen, Gould has accused Daniel Dennett of an “ultra-Darwinian strand of evolutionary thinking; of believing that just about every characteristic of every organism is shaped by natural selection” (Sterelny, 2007:67,70).

For other respondents, Darwin was a conniving conspirator in the service of colonialism.

*I incline to the view that Darwin invented his theory because it would boost the confidence of the white English colonizers to believe in a kind of “manifest destiny”. Myths have always been created by nations with great aspirations. Remember this was a time when the British, French and others felt it their task to civilize the world. Such a theory would no doubt be used to mean that if a hierarchy exists in the lower order of life, then, it would not be far-fetched to apply it to the human race too (male teacher).*

*I actually do because it implies that whoever is weak should be devoured. I also believe that there was a period where people with imperialistic thoughts used this as justification for what they were doing. This is the total antithesis of Islam because, in Islam, the principle of mercy and compassion is highly valued, and just because you are strong, does not give you the right to devour the weak because we believe, at the end of the day, God is the strongest and we will all have to stand in front of him. (male teacher).*

In the *Descent of Man* (1871), Darwin does state that in the coming centuries the civilized nations (i.e. of European descent) would exterminate the “savage” races throughout the world. Darwin was Eurocentric as most of his contemporaries were, and not immune to misinterpreting the consequences of his own theory (Grant, 2007). Unfortunately, the male teacher above, in a manner reminiscent of Christian creationists, blows such non-scientific statements out of proportion with the express purpose of discrediting the whole theory. The aforementioned Harun Yahya is one such example. Commenting on Thomas Malthus’ theory of population growth he says:

In short, according to this brutal claim, some people had to die for others to live. Existence came to mean “permanent war”...Humanity has paid a heavy price in the 20th century for the dissemination of these callous views which lead people to acts of ruthlessness and cruelty...As Darwinism fed racism in the 19th century, it formed the basis of an ideology that would develop and drown the world in the 20th century: Nazism” (Yahya, 1999:15-18).

One interview stated, “Yes, I feel that's a fair assumption. Without a deep set of ethical values a person with this kind of mindset could be extremely dangerous” (male teacher). The fear expressed above revolves around the fact that biology – particularly the theory of evolution – is amoral, and hence a perilous tool in the hands of individuals who do not submit to religious and ethical principles. This fear is evoked when Dawkins, for instance, calls human pity, “misfiring, Darwinian mistakes: blessed, precious mistakes” (Ward, 2008:204), or that morality is a “collective illusion of the genes” (Ruse in Ward, 2008:293). As demonstrated earlier, these devout Muslims struggle to conceive of any realm of existence that is free from the constraints of *tawhid*. Biology, too, according to this worldview, must be imbued with teleological and moral objective. This explains the constant need to inject a religious dimension to the issues:

*The very concept “survival of the fittest” sits uneasily with Islam. Evolutionists may look at nature where it does seem to fit the bill – the strong animals prey on the weak and successfully propagate their species leaving the weak to become extinct with time. However, Islam preaches the will of Allah. What happens is meant to happen because Allah so wills it. Yes, Islam believes in predestination – that Allah’s will is written down long ago and will find its fulfilment at the right time. The strong are not guaranteed success and invincibility at all, but are subject to the will of Allah. In Islam we see the weak and poor as people who are undergoing a test in this world. If they seek Allah and endure they will gain the favour of Allah and be rewarded in the afterlife. Rather than gloat over their good fortune, the strong ought to humbly remember that their fortunes could be reversed in the future. They need to work to alleviate the plight of the poor and weak (female, A-levels).*

As the response above demonstrates, the question triggered the need for a theological reconciliation between what the interviewee felt was a naturally occurring phenomenon and the belief that God is compassionate. Indeed, this need for a theological lens, although not specifically asked for in the question, was often interwoven into the answers. In later discussions with some of the respondents, I picked up this thread and asked for an elaboration. The rationale for seeking further elucidation is grounded in the fact that creationists are often accused of blissfully ignoring the imperfections, suffering and needless waste in nature. Foster (2009) argues, for example, that the pious Victorians experienced a crisis of faith long before Darwin because excavations during the Industrial Revolution revealed widespread extinction and death.

...they were living on top of an ancient mortuary... The worry was that God who was supposed to have made all the “types” seemed to be so indifferent to their extinction. It was the problem of animal pain, waste and death that unsettled the Victorians, not the problem of natural selection itself (Foster, 2009:20,21).

The responses given in this regard all seem to point in one direction – that Allah willed it. They generally expressed the view that this world is a transient phase in which all sentient creatures are buffeted by various trials and tribulations. Some seemed to suggest that the magnitude of the test along with the resilience of character one shows, will determine the rewards gleaned on the day of judgement. The statement below is a case in point:

*I think that it has nothing to do with nature selecting and favouring the strong, but an act of God. It is God who allows and permits copying errors in the DNA and handicapped children to be born. Of course, this would invite the criticism of God being unjust and cruel. The other day I watched a debate where Christopher Hitchens used exactly this argument against his God-affirming opponent. God is not evil but permits this to happen as a test. There is a Day of Judgement after all. I cannot explain the theology behind this act of God but he is not evil. But evolution does condone an ideology where the weak are preyed upon and exploited by the powerful (female, undergraduate).*

Clearly, the debate is compounded when one factors in the two worldviews which zealously inject their interpretations into the science as the respondent above indicates. It is understandable, but



unhelpful to the debate, that creationists respond in kind when they hear Dawkins compare our “selfish genes” to Chicago gangsters who have shrewdly survived millennia of competition.

The majority, however, as indicated earlier, rejected the proposition. Their views are considered next.

### 8.2.2 Distinguishing between evolution and social Darwinism

Many statements forwarded in this regard were bereft of the usual ideological slants. Incidentally, these interviewees, while usually sceptical of the agenda behind evolution, displayed a greater degree of moderation when weighing in on this particular aspect of the controversy. Although dismissing the scientific credentials of evolution, they refused to attribute any nefarious hidden agenda to the evolutionists. One interviewee responded:

*No. Again, it is certain people who dramatize aspects of Darwin's theory. They transplant this to mean that “survival of the fittest” means the USA, as the most powerful nation on earth, can go and bomb Botswana, for example, because it is the strongest. Actually, the phrase itself is not from Darwin, if I remember correctly. What these people do is make such terms and phrases synonymous with atheism and an attitude that says I can do whatever I want because I am physically stronger than you. This is the bully idea, the bully doctrine. “Survival of the fittest” and “right makes might” is not the same thing (male, undergraduate).*

Another interviewee was of the opinion that anyone who promotes such a link has ulterior motives:

*I disagree. I don't think that evolution condones such an ideology. This was perhaps true when humans lived as cavemen when resources were scarce but now this is not necessary since we have more equal access to all that we need to survive. Anyone still promoting this has some hidden motives. It is really about more power (male, A-levels).*

Although decoupling evolution and the popular phrase “survival of the fittest”, these respondents engaged with the subject on the level of social Darwinism alone. Only one of the interviewees appeared concerned with making a distinction between the biological and non-scientific uses of the term. This interviewee, however, did not elaborate:

*I haven't seen that point. I see evolution as science or a way of seeing how things are created and proceed to a higher level but I don't see it as something condoning oppression of the people. I understand “survival of the fittest” in biological terms more than in social or economic terms which also have an impact in terms of the subjugation of people (male, health worker).*

Nowhere did any draw attention to the biological dimension of reproductive differentiation arising from genetic traits. Even those who refused to countenance any link erroneously believed the phrase was about physical prowess and fitness.

*I don't really think that evolution condones the theory of survival of the fittest because I feel that they belong to different schools of thought. Survival of the fittest is generally understood as a competitive behaviour where the strongest and fittest will triumph whereas evolution deals with organisms working with each other to improve rather than competing with each other* (female teacher).

The denouement of this is a scenario where much zealous energy is expended in grappling with an issue which no longer has any resemblance to the author's original intention. In a new twist this canard now somehow assumes legitimacy as the locus of the discussion with few pausing to point out that the Emperor has no clothes. As earlier pointed out by Alexander (2008):

Unfortunately, the end result is that in the public consciousness the actual meaning of the label given to the theory itself changes, and so "Theory X" becomes socially transformed into "Theory Y" with all kinds of philosophical barnacles attached to it. So we have to keep knocking off the barnacles and allow the scientific theory to do the job for which it was intended. (Alexander, 2008: 174,175).

Another respondent, though cognizant of the fallacious nexus between evolution and the phrase "survival of the fittest", believed that religious concerns such as the need for cooperation and accountability in the afterlife would serve as a panacea for the perceived excesses of such an ideology.

*I don't support such an inference. I believe that humans know intuitively that the best way forward is through cooperation and unity. Altruism and a practical utilitarian approach ultimately win the day. This is not to suggest that some do not occasionally embrace a selfish "survival of the fittest" philosophy but that only leads to bloodshed and misery. What I am saying is that evolution can be stretched to make it say anything you want. This is why it is more superior to believe that God made everything and that we have a responsibility to each other because we will give an account in Yawm al-Qiyāmah (Day of resurrection and judgement)* (male, A-levels).

For the respondent above, and others with a religiously-oriented explanatory framework, it is salutary to consider the reasoning process informing their statements. That God made everything is the bedrock of faith and action which supersedes and trumps every other alternative or competing explanation. Such a framework constricts the parameters of what may be investigated or speculated upon which, unfortunately, negatively impacts the predicates of the scientific endeavour. As discussed in chapter 1.3.1, Sardar (2007) postulated that the legacy of colonialism in Muslim lands precipitated a constriction of *ijtihad* or critical inquiry. The onset of modern science, with the

corollary values of democracy, freedom of expression and the rights of the individual, to name a few, triggered an “enclave mentality” where religious knowledge *alone* was privileged with the result that the cross-pollination of knowledge from various fields sputtered to a halt. Gone was the earlier open dialogic process where Muslims sought knowledge widely even if it was to be found in China to use the oft-quoted statement attributed to the Muslim prophet Muhammad.

There are some who would critique what they perceive as a reification of Islam in the West. One such thinker is Gerd Baumann (1999) who is highly critical of the manner in which the British government and British political culture encourage Muslims and other religious communities to compete communally and vie for emancipation much the same way sports teams do (Baumann, 1999:76). This results in a further reification of Islam, for example, through social construction engineered under the auspices of the authorities who not only “divide and conquer” but also “serve to divide” (Baumann, 1999:77), according to him. Although Baumann’s (1999) point ought to be given serious consideration one senses that he gives the British government too much credit for concocting an essentialized version of Islam which *mutatis mutandis* might not have assumed the shape it has.

It is my contention that Islam, contrary to what one observes with reference to modern Christendom, is much more cohesive, united and ambitious in its aspiration. This is evidenced in the nascent rise and rapid spread of Islam extending all the way to Constantinople in 1453. Islamic theological history - although revealing a struggle between caliphs and contending schools of thought (e.g. *fiqh* vs. *Falsafa*) – experienced nothing approaching the schisms, cantankerous church councils and bloody wars that Christian denominations fought in Europe. Muslims, whether shi’a or sunni can enter any Mosque, anywhere in the world, and pray whereas Christians would prefer to stick with their denominations. Furthermore, although not uncommon, the efforts of Christians to rally together and lobby on behalf of other persecuted Christians in far-flung corners of the world dwarfs in comparison to Muslim efforts. In contrast, Muslims passionately supported their fellow-Muslims during the war in the former Yugoslavia (1991-95) and the Chechen wars (1994, 1996, 1999-2000). This global Muslim consciousness and solidarity cannot be a result of the policies of the British government.

In the final instance, the interviewees were asked to respond to the question, “Do you see any link between the theory of evolution and race ideology?” Perhaps this question, more than any other, would shed more light on the degree to which ideological investments obfuscate and exacerbate the debate. Before this, I will cursorily explain the way the term ideology is used in this chapter.

One contemporary usage of the term ideology refers to “a kind of obstacle to rational thought and clear perception that is supposed to affect the thinking of others, and especially of one’s political opponents” (Mautner, 2004:294). In this definition, ideology is perceived pejoratively as a systematically flawed thought process which distorts the subject’s perception of reality. For others, such as Marx and Engels, “ideology is a system of ideas that explains and legitimates the actions and interests of a specific sector (i.e. class) of society” (McGuire, 2002:238). Within such an understanding, ideology becomes the mainstay of dominant class groups. In a rather novel twist, Louis Althusser believed that, contrary to the notion of the autonomous, responsible and critical subject, it was the state which inculcated specific desires, values and preferences (ideological state apparatuses). This was done through a conglomeration of hegemonic institutions which includes the family, the media, the educational system and the Church, among others.

Following Barnes (2007), a case can be made for the argument that Islam ought to be perceived as a political ideology along with its religious heritage. Based on such an approach and in conjunction with the interviewees’ responses, all three usages of ideology above are relevant to various degrees.

### **8.3 Evolution and racism**

In his book *Dissent over Descent* (2008), Steve Fuller notes that it was not only the denial of the divine origins of humanity but the racially loaded nature of the theory of evolution which made it so controversial during the iconic *State of Tennessee v. John T. Scopes trial* (1925). According to him: “...the textbook used by Scopes, George William Hunter’s *Civic Biology* (the title itself a euphemism for eugenics), presented primate evolution as a linear progression across the races, culminating in Caucasian supremacy” (Fuller, 2008:35). Of course, this narrative which piggybacked on the prevalent racial theories of the day has few, if any, supporters today. Dawkins cautions against the fallacy of attributing agency to evolution as though hurtling forward with the teleological aim of producing humans leave alone a racialized hierarchy within humanity.

#### **8.3.1 Conflating evolution and racism**

The majority of the respondents were convinced that the theory of evolution was a racist theory. 11 respondents were unequivocal in their pronouncements. For example:

*I think evolution has affected race hierarchy – for example the slave institution. I think the white colonialists brainwashed the black people into thinking they were more closely related to monkeys like chimpanzees etc in order to enslave them. This is clearly bad as it was an abuse of power. Since Darwin came out with his theory as far back as 1859, clearly his theory was intended to condone such an ideology (male, A-levels).*

As mentioned earlier, the above statement emanates from a mindset which perceives the theory of evolution in Machiavellian terms – a calculated ploy with the objective of denigrating colonized peoples in order to effectuate their domestication. In a broad sweep, Darwin is maligned as a conspiratorial accomplice in the service of the colonizers. This language is reminiscent of the school of Black theology and other fiery militant activists such as Malcolm X and Huey P. Newton of the Black Panthers where slavery, a Marxist-inspired liberal theology (Paolo Freire) and other strands of black power thinking are woven together. Another interviewee argues along similar lines:

*There is something to be said for the fact that this theory saw the light of day during the heyday of racism. I don't know enough about Charles Darwin to say anything about his motives but could such a theory be invented by Africans? Never. (female, A-levels).*

Significantly, there are indications, as in the latter statement, that many of the interviewees believe the theory of evolution is a reserve of white supremacists. The fact that most of my interviewees were black is not peripheral to the study. The internet, for instance, abounds with material discouraging black people from embracing the theory of evolution due to the inherent racism, according to them. Kent Hovind, a controversial American science teacher and creationist, has a video posted on YouTube with the telling title, “Why Black People Shouldn’t Believe in the Evolution Theory”<sup>5</sup>. In the video, Hovind quotes Henry Fairfield Osborn Sr. (1857-1935): “The standard of intelligence of the average adult Negro is similar to that of the eleven-year old youth of the species *Homo Sapiens*”. One female interviewee was aware of the story of Ota Benga:

*I am not sure if evolutionists are claiming that Africans actually are closest to apes among humans but I do remember reading about the story of Ota Benga, the Congolese pygmy, who was placed in a zoo in the USA along with an ape in early 1900. This poor man had a wife and family but was displayed as a sort of “missing link” to the public. I don’t recollect reading about anyone objecting or protesting this appalling treatment. It is in such cases that I see religion as infinitely superior to the theory of evolution. God made all humans equal but we invent theories will distort such noble truths (female, A-levels).*

The little-known story of Ota Benga was shared in chapter 1.2.3. Yahya (1999:87, 88) often cites this story in his efforts to combat the theory of evolution. Benga was a pygmy with a family in the Congo. He was taken to New York and locked up in a cage along with a gorilla and an orang-utan

---

<sup>5</sup> (<http://www.youtube.com/watch?v=XBTO9DgqZys> accessed 29.07.11).

to give credence to the theory of evolution. He later committed suicide. This story has been a linchpin in the strenuous efforts of many creationists to discredit the theory of evolution. As mentioned earlier, however, there is little or no mention whatsoever of the racist attitudes of creationists by other creationists. This is a task left to the evolutionists to unravel. Henry Morris, perhaps the founding father of modern creationism and a fundamentalist Christian, attributed attitudinal dispositions to what he perceived as three distinct races of the sons of Noah in the Bible:

Possessed of a racial character concerned mainly with mundane matters, they (Hamites, especially Negroes) have eventually been displaced by the intellectual and philosophical acumen of the Japhethites and the religious zeal of the Semites (Isaak, 2007:4; Grant, 2007:185).

The reticence exhibited by the above respondents was shared by others who were not from sub-Saharan Africa. One student levelled the same charges of racism along with a host of other charges which resonate with the views of the aforementioned Yahya and Hovind.

*But after Darwin gave this idea to the European countries, they believed in it and thought it was correct and when they went into Africa and saw people who were not advanced - they looked at them and believed they were not fully evolved. They were still hunting like monkeys so they didn't see them as human. Evolution theory triggered basically a lot of things – atheism, racism, colonialism and this is all a fact if you look at the history. Even in the Soviet Union, evolution is closely associated with this. The theory of evolution really affected the history of the world but not in a good way. Darwin discriminated against people. If you look at natural selection, when white people went to Australia, they killed of the natives (male, PhD student).*

It appears the theory of evolution has been inextricably linked with some reprehensible acts and movements of the past in the minds of the majority of the respondents. Even those with higher education, as one can gauge from the last quote, seemed to struggle separating the wheat from the chaff. As one female stated: “Is it racist? I think looking throughout history, even before Hitler, German philosophers during the Enlightenment especially were big on that. There was this upsurge in the 19<sup>th</sup> century with Nietzsche and stuff where they were massively into the theory of evolution” (female, postgraduate). The modus operandi seemed to follow a particular trajectory: some very unpleasant historical aspect of the theory of evolution would be drawn attention to followed by a contrasting perspective with the perceived moral superiority of Islam and religious creationism, as in the quotes below:

*There are certain scientists who use the theory of evolution in order to justify race ideology – that certain races are endowed with more intelligence than others and have more adaptability than other races. So yes, evolution has justified, to a certain extent, racism. This, again, is the opposite of what I believe religion promotes. In the Qur'an Allah says that we have created you from Adam and Eve and have given you tribes and nations so that you should know each other. Another verse states that the best among you are the most God-fearing. So it has nothing to do with race and it has nothing to do with ethnicity. Even the Prophet says that you all came from Adam and Adam came from dust. So as a Muslim, I am*

*supposed to believe that every human being is of equal value to another human being. The only difference, or the only superiority, is the one who fears God. So race doesn't entitle you to any superiority. That is the basic Islamic belief (male, lay teacher).*

*Interestingly, Christians themselves have been justifying slavery from the Bible and other pseudo-scientific sources. This was before Darwin. However, when evolution came along, it strengthened race ideology. For example, some scientists began to measure and compare the skull sizes and noses of the various races. Such theories gave a veneer of respectability to slavery. God made people equal but man introduced inequality (female, undergraduate).*

As this is a small qualitative study, no claims to generalization are made. Nevertheless, my research suggests that some - if not many - blacks harbour some aversion to the theory of evolution because of the *perceived* suggestion that there is a scientific rationale purporting to “explain” the challenges faced by black people historically and contemporarily. This analysis would belong in the field of psychology and is as such beyond the scope of this study. Finally, for one student, there was some ambiguity as to whether evolution and racism are linked but he was sympathetic to views castigating evolution as a racist theory:

*Many theories have had unintended consequences. People can look at the theory and automatically begin to see some similarities between some Africans and apes, for instance. When I went to school here in Ilford, I still remember the biology textbook arguing for evolution through the example of homologies or the similarity of bodily structures between various animals. If someone believes this to be true, a link will also be made between monkeys and humans – especially Africans. We all know that Europeans really believed this and colonized the “savages” believing this was the order of nature, however much they may deny this today (male, A-levels).*

There were some, however, who rejected any attempts to link evolution with racism. Some of those views will be explored next.

### **8.3.2 Rejecting any nexus between evolution and racism**

Six of the interviewees rejected any nexus between evolution and racism. Any racial inference distilled from the theory of evolution was a consequence of their prejudiced minds, according to these interviewees.

*Very interesting! I remember there was a certain English author who came after Darwin and equated the theory of evolution with race. He said that the white man is the superior race and is on top of the food chain and the black man, because of his larger physical features, is subhuman. And because he is subhuman, we can do whatever we like with him. What this is a perversion of the theory of evolution. It is someone's own racism coming to the fore. A perfect example of this is Adolf Hitler and his Mein Kampf promoting anti-Semitism and nationalism.*

*No scientist, evolutionist or theologian equates the idea of evolution with racism. Only racists do (male, undergraduate).*

Upon a closer examination of the views of the interviewee above – and others who rejected any link between evolution and racism – it was evident that their responses were generally less dogmatic and ideologically charged. This measured response, however, did not extend to embracing the theory of evolution. Nevertheless, these candidates were at the minimum not driven to negate evolution because of any perceived link between evolution and racism or evolution and atheism, for example. It appears that their prior commitment to a particular hermeneutical interpretation of the creation narrative in the Qur'an would be the only remaining explanation for this reticence. The same candidate above when asked why many Muslims reject the theory of evolution replied:

*Darwin was a westerner; Muslims shun him as a Christian and assume that his theory is an ideological debate between Christianity and Islam. They don't understand that on the other side of the Atlantic there is exactly the same debate with Christians. This is the key problem – Muslims see evolution as a Christian idea. They think it is a Christian idea that seeks to "subvert" our kids. They don't know what the theory of evolution is because they don't know what their own religion says. All they know is the "don'ts". Don't submit to Christians, don't eat pork and don't drink alcohol. For example, my own mother wanted me to go and buy some fish from a Muslim fish monger. I said, Wait a minute! All fish is halal so why not go anywhere to buy fish? So she assumed that fish too must be bought from a Muslim fish monger. Ignorance is a major influence on peoples' opinion with regards to their opinion on evolution. Most of them don't know what evolution is about (male, undergraduate).*

Contrary to his conjecture, most of the interviewees (17) in this study considered evolution to be an atheistically-motivated theory and not a Christian-inspired one. Nevertheless, his own personal account of the tendency to think in dichotomous terms among the Muslims he knows is telling. Indeed, it is this ethos which Ramadan (2009) critiques when he levels the charge of paranoia-like scepticism of a constructed "Other" mostly equated with the West. This paranoia is concretized in labels such as Mecca Cola, Zem Zem Cola, Medina Cola and "Fulla, the *hijab* clad doll, an Islamized duplicate of the Barbie doll complete with a line of accessories that, like it, is made in China" (Ramadan, 2009:263, 264).

Another respondent also rejected any link between evolution and racism but felt the need to justify what she felt was the lack of adequate scientific advancement among Blacks. It is significant that the question did not allude to Black people at all.

*I don't there is any link whatsoever. I think it's just rude to think that black people are closer to the apes. If evolution supports a race hierarchy among humans, than explain to me how an ape became a white person. When it comes to Africans and their IQ, I think we have forgotten our*



*history. We don't even know what kind of civilization we had there and how life was in Africa back then before slavery and colonization. We were not given a proper chance to prove ourselves. As far as I know no one's touched China so they are advancing because they have not had the setbacks that we have had. So race and IQ have nothing to do with evolution. If evolution is true, then we all had the same starting point and so the differences boil down to nature versus nurture (female, A-levels).*

Another interviewee believed that both atheism and racism were a misuse of evolution: “Obviously people may use evolution as a way to attack someone and say, ‘You have no God’. Racism starts when one society believes it is superior to another. They will use any tool to do that. I don’t think Darwin was there to do that” (male, undergraduate). Finally, one interviewee stated:

*Again I would say that I cannot get the connection. Scientists of evolution are more interested in the genes and the DNA aspect rather than such ideologies which basically are misuses of the theory. Difference between people is more an environmental thing rather than evolutionary (male, health-worker).*

The last segment briefly presents the responses of the 3 imams with reference to their views on whether or not there is a link between evolution and atheism and evolution and racism respectively.

#### **8.4. Responses of imams**

Imams are significant others in the Muslim community whose views are influential in inculcating religious and moral values (one pillar in Althusser’s state ideological apparatuses). First believed to be used by the psychiatrist Harry Stack Sullivan (1953), the term “significant other” refers to a person whose influence on an individual affects her self-understanding and reception of social values, norms and mores. With regards to Muslim integration into western society, obviously, this influence can either be a welcome catalyst or an impediment. As discussed earlier (see 1.4.1), many have criticised the inflammatory role played by the Danish-Muslim imam, Abu Laban, during the “Cartoon Controversy”. But for his tour of Middle-Eastern countries, with the aim of soliciting their reaction, the issue may not have become what the Danish Prime Minister, Anders Fogh Rasmussen, referred to as the “Denmark's worst international crisis since World War II” (Times Online, 2006).

For Abu Laban, a Muslim could never be a normal citizen of a western state. In Laban’s view, a Muslim enters into a “security contract” with the secular state, but as a true believer he can never accept secularism – the separation of religion and state. He must always remain loyal to the highest religious law, the Sharia. "We Muslims must use freedom of speech," says the imam, “to the extent that it serves the goals of Islam.” (Eriksen, 2007,8). It was earlier shown that some of the

interviewees attended madrassas after schooling. Obviously, with regards to this study, what the imams had to say about the theory of evolution would be significant in moulding the opinions and attitudes of the young, malleable and impressionable minds of these students.

In what follows, the three imams views are considered with reference to whether a link exists between the theory of evolution and atheism.

#### **8.4.1 Evolution and atheism – imams’ views.**

*Just look at Professor Dawkins. He is virulently anti-religion. His atheistic agenda is thinly veiled. Most militant atheists champion the cause of evolution strongly. What they refuse to accept is that science tells us what happens, but not why. For example, particles coalesce because of magnetic energy etc but not why. Why something happens is answered by religion not science (imam 1).*

As has been discussed in chapter two (see 2.3.4), responses like the ones above, are in essence feuds between creationists and those who have embraced scientism – the belief, according to Jacques Monod, for example, that science subverts every mythical or philosophical ontogeny whether predicated upon the aborigine tradition or dialectical materialist one. Science is venerated at the expense of its methods leading Mary Midgley (1985) to describe evolution as “the creation-myth of our age”. Dawkins, as imam 1 notes, also obfuscates the legitimate parameters of the debate. In his introduction to the 30th anniversary edition of *The Selfish Gene* (1976), for example, he states, “Presumably there is indeed no purpose in the ultimate fate of the cosmos, but do any of us really tie our life’s hopes to the ultimate fate of the cosmos anyway?” (Dawkins, 2005: xiii).

It is clear that Dawkins has managed to rouse the ire of many creationist Muslims.

*I haven’t looked into it myself, but from what I am hearing that wasn’t necessarily true. Darwin wasn’t a disbeliever. He was an agnostic but whether he had an agenda, I can’t say. It depends on who is doing the so-called science of evolution. Some sincerely believed they were dealing with science while others had an agenda. For example, if Dawkins were to be doing the talking, he clearly cannot be trusted. Studies need to be done on the other side - that is creationism. Right now creationists are on the defensive. There ought to be more offensive studies done to evaluate the claims of evolution (imam 2).*

Such utterances give voice to two tentative conclusions, among others: firstly, Dawkins is clearly inextricably linked with theory of evolution. When he speaks, he is seen as the foremost exponent of the theory of evolution. Secondly, and unfortunately for the debate, his metaphysical ruminations - although irrelevant to evolution - are also perceived as representative of the views of the scientific

community. Imam 2 asked me to look up a certain Shaikh Nuh Ha Mim Keller who is a convert to Islam stating that Keller's views are synonymous with his own. Keller states:

The last time I checked, the university scene was an atheistic subculture of professors and students actively or passively convinced that God was created by man. In bastions of liberalism like the University of California at Berkeley, for example, which still forbids the establishment of a Religions Department, only this attitude will do; anything else is immature, is primitivism. The reduction of human behaviour to evolutionary biology is a major journalistic missionary outreach of this movement. I am pleased with this, in as much as Allah has created it to try us, to distinguish the good from the bad, the bad from the worse. But I don't see why Muslims should accept it as an explanation of the origin of man, especially when it contradicts what we know from the Creator of Man (Keller, 1996).

Imam 3, as mentioned in other chapters, was the only respondent who accepted the theory of evolution. However, in assessing why many Muslims reject evolution, the name of Dawkins features again:

*I'll tell you the fear – the fear of Muslims that if they believe in evolution that would disprove the Qur'an or disprove Islam and they would find themselves agreeing with the likes of Dawkins. But biologists agree that evolution is beyond a theory – it is a fact (imam 3).*

There is a paradox in Dawkins' role as an ambassador for the theory of evolution and his unvarnished denunciation of the government and Muslims. The former, he believes, promotes multiculturalism and political correctness in relation to Muslims at the expense of science, while the latter is to blame for privileging a literalist tradition implacably ill-disposed towards evolution (Macrae, 2008). To his mind, the recent upsurge in hostility towards evolution is linked to the rise in Islamic influence gauged by the 30% of teenagers who subscribe to some form of Intelligent Design theory. As mentioned earlier, his books have not been translated into Arabic and are heavily censored in Turkey (Henderson, 2009). The literalist tradition is the underlying reason for this implacable stance and acrimony, according to Dawkins.

Thus rather than be a part of the solution, Dawkins is perceived as a part of the problem. What, then, is the best way forward? It appears that each proposed solution raises a new crop of problems.

*They have to look at the evidence objectively. To focus on the ideological aspects is a cheap way of distracting from the issue at hand. David Attenborough recently showed fossils of birds with feathers but claws at the end of the feathers like the archaeopteryx. There are countless such specimens e.g. the hominids showing human evolution etc which just cannot be dismissed out of hand. Some of our poets (Rumi) believed that Allah created many Adams which could be one way of showing some harmony between the theory of evolution and the Qur'an. I have said that Muslims need to transcend the madrasa level of intellectual debate in order to be taken*

*seriously. The problem we have today is these Saudi clerics who interfere in the debate issuing fatwas to silence dissenting opinions. Evolution is not a matter of iman (belief) or Kufr (unbelief) and people are free to accept or reject it (imam 3).*

The above assessment no doubt is problematic - a fact which imam 3 himself would concede. To name just two: the Sufi and mystic, Rumi's interpretation of several Adams would raise many eyebrows in the Muslim world and, secondly, as long as the concept of a transnational *ummah* is valorised among British and other Muslims in the West, clerics in Saudi Arabia and other conservative institutes (e.g. Al-Azhar University, Cairo) will weigh in on issues pertaining to Islam.

Finally, the views of these imams on evolution and racism are considered.

#### **8.4.2 Evolution and racism – the imam's views**

*If one wishes to promote mad ideas through distortion, then science is the perfect arena. I do not see a link but I understand that one can see such a link if one wishes to exploit certain agendas (imam 1).*

The alleged link between evolution and racism is something imam 3 personally does not see. However, his perception of science as the “perfect arena” for promoting distortions is telling. Gauging from the responses of others in this study, one detects some scepticism and tension in relation to science. Creationists loathe science's sometimes iconoclastic pronouncements. In their minds, science *ought* to play the role of a humble servant corroborating and propping up the claims of religion (Islamic in this instance). Seen through such a lens, the acrimony towards science is the upshot of science's determination to not only carve out an autonomous niche for itself, but also dethrone God. In the words of the noted Indian Islamic scholar, Maulana Wahiduddin Khan:

“Scientists” of the ‘Modern’ age are agreed upon the theory of evolution. This concept is becoming dominant in all scientific fields. An enchanting idol of spontaneous evolution has been set up in place of God. If truth were told, the very dogma of organic evolution, from which all of the evolutionary concepts have been borrowed, is nothing but a hypothesis without any evidence (Khan, 2008:45, 46).

Imam 2, who also rejects the theory of evolution, speculates on the reason why “non-Europeans” are sceptical of evolution:

*It almost seems like there is a conspiracy. It may not be true but it seems like someone's got a massive agenda and they are trying to push it through. One wonders given the racial undertone whether it is for this reason, rather than any explicit linkage, that many non-Europeans are sceptical of the theory of evolution (imam 2).*

Imam 3, who embraced the theory of evolution, brushed off attempts to dwell on the ideological aspects.

*They have to look at the evidence objectively. To focus on the ideological aspects is a cheap way of distracting from the issue at hand (imam 3).*

In conclusion, the above lends some credence to the contention that evolution is erroneously perceived as a western ideological weapon cloaked in the garments of science and aimed at securing the submission and deference of non-Europeans. If true, then educators in the UK might benefit from approaching the theory of evolution from in a multi-disciplinary fashion rather than merely as a purely scientific undertaking. In other words, as I have attempted to show in the literature review and the responses of the interviewees, there will be a need for teachers, for example, to understand and be sensitive to the historical trajectory of Islam, its encounter with western modernism, the impact of *tawhid* and *ummah* as mediating factors, the overt or covert association of evolution with racism and the psychological reticence that follows, among others. Understandably, the list would be a daunting task for any one teacher alone. It would probably require experts from a plethora of fields to work together and, for example, produce textbooks which draw expertise from these fields

## CONCLUSION

This study considered the creation-evolution debate from the perspective of Muslims in the city of London, UK, between March and August, 2011, using semi-structured interviews. As half of the local authorities with the largest numbers and highest proportions of Muslims in England and Wales are found in the London conurbation (Lewis, 2007:21), the capital was selected as the main recruiting ground for accessing interviewees. 25 Muslims were interviewed of which 16 were males and 9 females (Table 5.2). 3 of the candidates were imams. 13 of the interviewees in the cohort were undergraduates and 4 postgraduates (Table 1). 11 of these were teachers in various capacities in London. Furthermore, all the candidates had completed their GCSEs in the UK and were thus familiar with the theory of evolution as taught in Key Stage 4.

Until recently, the lion's share of focus on the subject of creation-evolution revolved around a distinctive kind of Christian fundamentalist creationism promulgated by the likes of Henry Morris in the USA and spearheaded today by organisations like the Institute for Creation Research, Discovery Institute and Answers in Genesis founded by Ken Ham. However, with the rapid growth of Islam in the UK, due to a combination of immigration and proselytizing (Reddie (2009) estimates that 13% of Blacks in London are Muslims), suspicions abound that anti-evolution has an "Islamic flavour". Even as this dissertation was being concluded, *The MailOnline* ran an article where Professor Steve Jones of UCL complained that Muslim medical students were boycotting lectures. The article begins by stating that "Muslim students, including trainee doctors on one of Britain's leading medical courses, are walking out of lectures on evolution claiming it conflicts with creationist ideas established in the Koran." (*MailOnline*, 2011). A major study conducted in 2007 evinced low levels of support for the theory of evolution in six Muslim countries (Hameed 2008:1637) where the majority believed the theory could not possibly be true.

24 of the 25 interviewees in this study rejected the theory of evolution, especially the primates to man aspect. On the whole, the responses proceeded along similar lines demonstrating a great degree of homogeneity. This blanket denial of evolution can be ascribed to an epistemic conception which privileges a literal interpretation of the creation texts in the Qur'an. It has been suggested (see 5.1.1) that prolonged exposure to Western liberal education and its corollary secular socialization undermines fundamentalism and promotes tolerance (Vogt 1997). However, the findings in this small study indicate that this is not necessarily the case as 17 of the candidates were highly educated all graduating from institutes in the UK, and some teaching in public schools. Further research could shed light on the factors that feed this resilience and insularity. For instance, it is plausible to surmise that the fact that some of the teachers were also influential members of the

Muslim community teaching in various capacities (e.g. madrassas) could further prejudice the minds of the young pupils against evolution. Additionally, interviewees erroneously assumed that it was possible to espouse certain parts of the theory of evolution – e.g. variation within species – as long as this did not extend to humans (speciation). In this aspect their responses were commensurate with the arguments of Christian creationists who distinguish between microevolution and macroevolution – terms which are disparaged among evolutionary scientists (e.g. Coyne (2009) & Dawkins (2009)).

Again, and commensurate with the literature review, the word “theory” was often cited as proof that evolution was not based on solid science. To their mind, “theory” is a subjective cognitive activity, and as such, the postulates and conclusions of the theory of evolution are open to debate. Armed with this incorrect understanding, many expressed some irritation with the monopoly enjoyed by evolution in mainstream education. 17 of the interviewees (see figure 6.1) called for the cessation of the teaching of evolution in schools. These calls emanated from a fear that impressionable children’s minds were being indoctrinated to accept the theory of evolution. Obviously, the onus is on the government and other stakeholders in education to grapple with this challenge. This is not to say that the government is not cognizant of this recurring interrogation of the word “theory” as Appendix E demonstrates:

In science the meaning is much less tentative and indicates that there is a substantial amount of supporting evidence, underpinned by principles and explanations accepted by the international scientific community. However, it also signals that all scientific knowledge is considered to be provisional as it can be overturned by new evidence if this is validated and accepted by the scientific community (Appendix E).

As some of the interviewees were critical of the teaching of the theory of evolution in schools, this issue will need to be addressed more adequately at the chalkface. Another important finding in this study is the abundant support (15 of 22) for the teaching of evolution in state schools despite the overwhelming rejection of the claims of the theory of evolution. This paradox was explained by the need for developing critical thinking skills and an egalitarian school approach, but does not imply support for the theory of evolution. The Muslim academic, Shaikh Abdul Mabud, who is, among others, Professor of Islamic Philosophy at the Islamic College for Advanced Studies, affiliated with Middlesex University, London, echoes the above views:

This is where the teaching of evolution in schools has gone wrong. What are the flaws in the way we teach our children evolution? In a nutshell, despite the fact that there are a number of deficiencies in the theory, these deficiencies are rarely mentioned in the classroom, and the theory of evolution is all too often presented as absolutely true, with hardly any counterexamples or disagreeing data (Jones and Reiss, 2007:93).

The fact that the majority of those who favoured home-schooling were teachers lends weight to the contention that higher education and more exposure to liberal socialization does not automatically translate into a more tolerant or secular mindset.

The government recommendation that there “is scope for young people to discuss beliefs about the origins of the Earth and living things in RE (religious education)” (Appendix E) was welcomed by the majority of respondents (figure 6.1). However, there was some ambiguity with regards to how this can be implemented in practice. Some felt that relegating creationism to RE will undermine its bid to be taken seriously. In addition, some were convinced that the atheism of RE teachers themselves raises questions about their impartiality and thus competence to teach creationism. There is the fear that the current ethos underpinning much RE teaching may distort the original message of the different faiths in the quest for harmony and commonality (Barnes, 2007). Put differently, the state, which is seen to be the foremost agent of secularism, cannot be trusted with the task of arbitrating on religious issues of such a nature. As mentioned earlier, the Muslims interviewed were more likely to take their cue from imams and clerics in Saudi Arabia in line with the phantasmagoric nature of the *ummah*. Questions such as, “Which creation version should be taught in school?” and “Which version of *creationism* should be privileged?” will be fraught with difficulties.

Apropos the latter question regarding creationism it was pointed out in this study that there are a few but vital differences between Islamic and Christian creationism (the young-earth brand). Among others, Muslims do not subscribe to a young-earth model. In addition, the Qur’an describes a local flood around the Caspian Sea area not powerful enough to alter the physiographic features of the Earth such as the Grand Canyon, something which Christian creationists propound. Contra most young-earthers, Muslims embrace the Big Bang convinced that the Qur’an mentions this event. In light of these differences, it is essential to the debate that stakeholders not lump the two traditions together because doing so plays into the hands of extremists on both sides of the divide.

A further finding from this study, and one which could benefit from further research, is some interviewees’ religiously-motivated conviction that evolution contradicts the Qur’anic declaration that transmutation of some humans into apes was divine judgement meted out to some rebellious Jews. Within such a hermeneutical framework any change from one species to another is to be abhorred as it was employed as a punitive measure (Sura 2:65 uses words like “warning” and “admonition”). Given that over one-third of the interviewees supported such a reading (these were the ones I could contact) this could be a significant find which would go some way to explain the widespread aversion to the theory of evolution among many Muslims. This understanding flies in



the face of the theory of evolution which postulates that *all* human beings share a common ancestry with *all* living organisms. Obviously, if all living organisms share a common ancestry, this negates the intended deterrent effects built into the Qur'anic argument and interrogates the Great Chain of Being worldview. Again, despite many of the interviewees stating that the theory of evolution is racist, except for one imam, none reflected on the incongruity of maintaining that some Jews were transmuted into apes and pigs.

Overall, based on the interviews conducted in this study, it is concluded that little effort was made to embrace the earlier spirit of sustained reasoning (*ijtihad*) which scholars like Sardar (2007), Tibi (2009) and Ramadan (2009) have called for among Muslims in the West. I have argued in the literature review that a degree of epistemological flexibility was woven into the intellectual fabric of Muslim scholars during the “Golden Age” beginning around the 8<sup>th</sup> century CE. The interviewees’ responses lend succour to Sardar’s (2007) lament that there has been a constriction of *ijtihad*; science was accommodated and valorised as long as it was perceived to be corroborating Qur’anic pronouncements. The compendium of knowledge inherited from the achievements of the Medieval Muslim scholars is accorded a hallowed status among the interviewees, but there is a reticence to engage with the spirit of autonomous inquiry which spawned those discoveries. Apparent contradictions were brushed aside or declared invalid. The interviews confirm this flawed approach to the scientific enterprise reminiscent of “Bucallism” and “Nasrism” which were attempts at carving out a separate domain for “Islamic science” as opposed to “western science” (see 2.5.3). Revelation, as crystallized through the interpretive schemas of Muslim scholars (*ulema*), superseded other avenues of knowledge (e.g. scientific inquiry constrained by testability, publicity, empiricity and fallibilism (Audi, 2009)). In light of this it is significant that when asked if evolution would be palatable had the Qur’an sanctioned it, the majority refused to countenance such a proposition. This reveals the deep-seated antagonism to the theory of evolution.

This study argues, along with Muslim scholars like Bassam Tibi (2009), that there is a need to revive the spirit of Averroes (Ibn Rushd) who advocated the concept of “double truth” (*al-haqiqa al-muzdawaja*) among Muslims who engage with science. This model calls for a demarcation between religious and rational knowledge while accepting the validity of both. Reason and revelation do not have to be perceived as mutually exclusive, but complementary. I stop short of recommending uncritically a full espousal of the liberal *falsafa* tradition as Tibi (2009) advocates because medieval Arab/Muslim scholars like al-Farabi and ar-Razi held views which many Muslims eschew ( see section on rational theology and the Mut’azilites 2.3.1).

Educators in the UK - and science teachers in particular - can benefit from exploring the rudimentary evolutionary beliefs of Arab/Muslim scholars during the “Golden Age”. The literature review reveals that there is a rich and detailed history of such scholars openly adumbrating modern-day understandings of uniformitarianism and rudimentary forms of the theory of evolution itself (see 2.2.1). In engaging Muslim pupils, perhaps biology textbooks could refer to the evolutionary beliefs of Muslim scholars of the “Golden Age”. This may go some way in mitigating the view that the theory of evolution is a western, anti-Islamic/theistic construct. Furthermore, if the Muslim contribution to learning was instrumental in contributing to the Renaissance – particularly the assimilation of Greek learning which was in turn reworked and enhanced by Muslims intellectuals (Lindberg and Numbers, 2003:10, 11) – then such an acknowledgement in school textbooks, for example, could have a salutary effect in motivating Muslim pupils.

In chapter three the privileging of scientific naturalism as the only permissible worldview has been critiqued. The responses of the interviewees demonstrates some scepticism with regards to the perceived atheistic underpinning of the modern scientific enterprise as distilled through the legal court battles in the USA from the Scopes Trial (1925) to *Kitzmiller v. Dover* (2005). It has been suggested that the current positioning of the theory of evolution under the category of scientific naturalism, with all that this philosophical worldview entails, has the unfortunate consequence of alienating some Muslims from seriously engaging with the claims of the theory of evolution. The epicentre of the creation-evolution debate shifts from a scientific consideration of the issues involved to one where a naturalistic/materialistic worldview is pitted against a religious worldview. Clearly, some effort will be required in convincing Muslims that the scientific enterprise is not prejudiced against faith but that issues of faith – particularly a *tawhidic* model – cannot adjudicate scientific research.

A significant find in this small-scale study is the linkage of evolution with atheism. 10 of the 25 interviewees brought up the name of Dawkins and in every instance unflattering words and phrases such as “virulently anti-religion”, “untrustworthy”, “a distorter of science”, “sensationalist” and a host of other unsavoury characteristics were levelled against him. The majority of the interviewees affirmed that the perceived nexus between evolutionists and atheism heightened their scepticism of evolution (see 8.1.1). The only dispassionate view of Dawkins was forwarded by imam 3 who did accept the theory of evolution. Nevertheless even he conceded that Dawkins has become a liability in the creation-evolution debate because some Muslims, who may be convinced of the claims of evolution, are reticent for fear of being associated with Dawkins.

Again, like atheism there is a perception among those interviewed that the theory of evolution is inherently racist (8.3.1). The study implicated Muslims such as Harun Yahya for the dissemination of such a perception. This is another challenge that obfuscates the debate. It goes without saying that the perception that prominent scientists have colluded in disseminating atheism as a necessary denouement of the theory of the evolution must be rectified. The question, “Who speaks for evolution?” becomes a pressing one. Those in public positions of responsibility will need to exercise much care and discretion when tempted to overstep the bounds of the legitimate domains of their field of inquiry. More research needs to be conducted into the degree to which evolution and atheism are linked in the minds of Christians and Muslims who reject the theory of evolution. In this regard, the work of Professor Denis Alexander at the *The Faraday Institute for Science and Religion* at Cambridge is to be commended.

Commensurate with Bourdieu’s (1990) *habitus*, I have argued (4.3.1) that imams and other Muslim lay teachers offset the “pedagogic authority” and “pedagogic action” exerted by the school in relation to the theory of evolution. The Muslims pupils who attend *madrassas* after school (as some in the study did) could in the same day find themselves subjected to two diametrically opposed views on the theory of evolution. The imams, as significant others whose pronouncements carry more weight than school teachers, no doubt would be instrumental in inculcating views which are inimical to evolution. Perhaps schools and stakeholders in the debate could enter into a dialogue with imams and other lay scholars who teach Muslim pupils in *madrassas* or similar foras. Unfortunately, calls for imams to be trained in UK universities are not only perceived as condescending, but are often motivated by political concerns for ameliorating radicalism and extremism alone (Shepherd, 2007). What is required is a platform of interreligious dialogue where issues such as the creation-evolution debate can be explored without the usual political investments.

## Bibliography

70,000 gather for violent Pakistan cartoons protest. 15 February 2006. (2006, February 15). Retrieved August 1, 2011, from Times Online (London): <http://www.timesonline.co.uk/article/0,,25689-2041723,00.html>.

70,000 gather for violent Pakistan cartoons protest. (2006, February 15). Retrieved August 1, 2011, from Times Online (London): <http://www.timesonline.co.uk/article/0,25689-2041723,00.html>.

Al-Banna, H. (1979). *Between Yesterday and Today. Five Tracts of Hasan al-Banna: a Selection from majmu' at rasail al imam al shahid hasan al-Banna*. (C. Wendell, Trans.) Berkeley: University of California Press.

Al-Biruni, A. (1000 AD). *Athar-ul Bakiya (The chronology of Ancient Nations)*. (E. C. Sachu, Trans.)

Alexander, D. (2008). *Creation or Evolution: Do We Have to Choose?* Oxford: Monarch Books.

Andersen, H and Kaspersen, B.L eds.). (1996). *Classical and Modern Social Theory*. Oxford: Blackwell.

Ansari, H. (2004). *The Infidel Within: Muslims in Britain since 1800*. London: C.Hurst & Co. .

Appiah, K. (2006). *Cosmopolitanism: Ethics in a world of strangers*. London: Penguin Books.

Archer, M. (1982). Morphogenesis versus structuration: on combining structure and action. *British Journal of Sociology*, 33, 455-483.

Armstrong, K. (1993). *A History of God: The 4,000-Year Quest of Judaism, Christianity and Islam*. New York: Ballantine Books.

Armstrong, K. (2009). *The Case for God: What religion really means*. London: The Bodley Head.

Arnd-Caddigan, M and Pozzuto, R. (2006). Truth in Our Time. *Qualitative Social Work* , 5 (4), 424-440.

Asad, T. (1993). *Anthropological Conceptions of Religion: Reflections on Geertz. Genealogies of Religion*. Baltimore: John Hopkins University Press.

Aslan, R. (2005). *No God but God: The Origins, Evolution and Future of Islam*. London: Arrow Books.

Astley, J and Francis, L. (2010). Promoting positive attitudes towards science and religion among sixth-form pupils: dealing with scientism and creationism. *British Journal of Religious Education*, 32 (3), 189-200.

Audi, R. (2009). Religion and the Politics of Science: Can evolutionary biology be religiously neutral? *Philosophy and Social Criticism* , 35, 23-50.

Bakar, O. (1999). *The History and Philosophy of Islamic Science*. Cambridge: The Islamic Texts Society.

- Barnes, P. (2007). Muslim Terror, Religious Violence and Representations of Religion in the Liberal Democratic State. (M. B. Rogers, R. Amlot, C. M. Loewenthal, H. Ansari, Lewiston, & M. Cinnirella, Eds.) *British Psychological Society Seminar Series* .
- Barnes, P. (2009). *Religious education: taking religious difference seriously* (Vol. 17). Impact.
- Bartels, F. (1965). *The Roots of Ghana Methodism*. Cambridge: Cambridge University Press.
- Baumann, G. (1999). *The Multicultural Riddle: Rethinking national, ethnic, and religious identities*. London: Routledge.
- Baxter, K. (2006). From Migrants to Citizens: Muslims in Britain 1950s-1990s. *Immigrants & Minorities* , 24 (2), 164-192.
- Beattie, T. (2007). *The New Atheists: The Twilight of Reason & The War on Religion*. London: Darton, Longman and Todd.
- Behe, M. (1996). *Darwin's Blackbox: The Biochemical challenge to evolution* . New York: Simon & Schuster.
- Besteman, C and Cassanelli, L. (2000). *The struggle for land in Southern Somalia: The war behind the war* (second ed.). London: Haan.
- Bhaskar, R. a. (1998). Introduction: basic texts and developments, in: M. Archer, R. Bhaskar, A. Collier, T. Lawson & A. Norrie (Eds) *Critical realism: essential readings*. Pp. 3-15. London and New York, Routledge: London & New York. 3-15. In M. Archer, R. Bhaskar, T. Collier, A. Lawson, & A. Norrie, *Critical realism: essential readings* (pp. 3-15). New York: Routledge.
- Bhaskar, R. (1998). *The Possibility of Naturalism: A Philosophical Critique of the Contemporary Human Sciences* (Third ed.). London: Routledge.
- Bhasker, R. (1975). *A Realist Theory of Science*. Brighton: Harvester Press.
- Blackmore, S. (1999). *The Meme Machine*. Oxford: Oxford University Press.
- Bolognani, M. (2007). Islam, Ethnography and Politics: Methodological Issues in Researching amongst West Yorkshire Pakistanis in 2005 . *Social Research Methodology* , 10 (4), 279-293.
- Bourdieu, P and Passeron, J.C. (1990). *Reproduction in Education, Society and Culture*. (R. Nice, Trans.) London: Sage.
- Bourdieu, P. (1997). The Forms of Capital. In: Halsey, A.H., Lauder, H., Brown, P.,. In A. H. Halsey, H. Lauder, & P. Brown.
- Bowden, M. (1998). *True Science Agrees with the Bible*. Kent: Sovereign Publications. Kent : Sovereign Publications.
- Bowker, J. (1995). *What Muslims Believe*. Oxford: Oneworld publications.
- Bragg, M. (2006). *12 Books that Changed the World*. London: Hodder & Stoughton.

Brateman, P. (2011, May 4). *CrISIS; Creationism In Schools Isn't Science*. Retrieved July 11, 2011, from British Centre for Science Education: <http://bcseweb.blogspot.com/2011/05/crisis-creationism-in-schools-isnt.html>

Brekke, J. (1986/1995). Scientific Imperatives in Social Work Research: Pluralism is not Skepticism. (K. Tyson, Ed.) *New Foundations for Scientific Social and Behavioral Research: The Heuristic Paradigm*, Allyn and Bacon.

Bryman. (2004). *Social Research Methods* (second ed.). New York: Oxford University.

Buber, M. (1958). *I and Thou* Edinburgh. (R. G. Smith, Trans.) Edinburgh: T & T. Clark.

Bucaille, M. (1995). *The Bible, The Qur'an and Science* (1st ed.). New Delhi: Millat Book Centre .

Burgess, S. (2004). *The Origin of Man: The image of an ape or the image of God?* Malta: Gutenberg Press.

Buruma, I and Margalit, A. (2004). *Occidentalism: A Short History of Anti-Westernism*. London: Atlantic Books.

*Cairo Declaration on Human Rights in Islam*. (1990, August 5). Retrieved February 7, 2012, from <http://www.arabhumanrights.org/publications/regional/islamic/cairo-declaration-islam-93e.pdf>

Caruna, L. (. (2009). *Darwin and Catholicism: The Past and Present Dynamics of a Cultural Encounter*. London: T & T Clark.

Cassanelli, L. (1995). *Victims and vulnerable groups in southern Somalia. Report for the Documentation, Information and Research Branch of the Immigration and Refugee Board, Ottawa, Canada, Ottawa: DIRB*. Ottawa, Canada: DIRB.

Chappell, V. (1994). *The Cambridge Companion to Locke*. New York: University of Cambridge Press.

Clarke, P. (1986). *West Africa and Christianity: A Study of Religious Development form the 15th to the 20th Century*. London: Edward Arnold.

Cohen, L. Manion, L., & Morrison, K. (2007). *Research Methods in Education*. London & New York: Routledge.

Coles, M. I. (2008). *Every Muslim Child Child Matters: practical guidance for schools and children's services*. Stoke on Trent: Trentham Books.

Collet, B. (2007). Islam, national identity and public secondary education: perspectives from the Somali diaspora. *Race Ethnicity and Education* , 10 (2), 131-153.

Collins, F. (2007). *The Language of God: A Scientist Presents Evidence for Belief*. London. London: Simon & Schuster.

Copson, A. (2009, November 9). *The GuradianOnline*. Retrieved July 2011, 2011, from A birthday present for Darwin: <http://www.guardian.co.uk/commentisfree/belief/2009/nov/09/evolution-primary-schools-science>.

- Corben, V. (1999). Misusing phenomenology in nursing research: identifying the issues. *Nurse Researcher*, 6 (3), 52-66.
- Coyne, J. (2009). *Why Evolution is True*. Oxford: Oxford University Press.
- Creswell, J and Clark, V.L.P. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks, London, New Delhi: Sage Publications, Inc.
- Darwin, D. (1998). *The Origin of Species*. London: Wordsworth Classics.
- David, M. (2005). *Stanford Encyclopedia of Philosophy*. Retrieved 11 16, 2010, from The Correspondence Theory of Truth: <http://plato.stanford.edu/enries/truth-correspondence>
- Davies, P. (2006). *The Goldilocks Enigma: why is the universe just right for life?* London: Penguin Books.
- Dawkins, R. (1989). *The Selfish Gene*. New York: Oxford University Press.
- Dawkins, R. (1997). Is Science a Religion? *The Humanist* , 57, 26-29.
- Dawkins, R. (1985). *The Blind Watchmaker*. London: W.W. Burton.
- Dawkins, R. (2006). *The God Delusion*. London: Black Swan. London: Black Swan.
- Dawkins, R. (2009). *The Greatest Show on Earth: The Evidence for Evolution*. London: Bentham Press.
- Dennett, D. (1995). *Breaking the Spell: Religion as a Natural Phenomenon*. London: Penguin Books.
- Department for Children, S. a. (2007). Guidance on the place of creationism and intelligent design in the Science classrooms. Retrieved 3 1, 2012, from <http://www.secularism.org.uk/uploads/dcsf-guidance-on-creationism.pdf>.
- Diamond, M. (1974). *Contemporary philosophy and religious thought: an introduction to the philosophy of religion*. New York: McGraw-Hill.
- Dilley, P. (2000). Conducting Successful Interviews: Tips for Intrepid Research. *Theory Into Practice*, 39 (3), 131-137.
- Dixon, T. (2008). *Science and Religion: A Very Short Introduction*. Oxford: Oxford University Press.
- Doward, J. (2012, January 15). *Richard Dawkins celebrates a victory over creationists*. Retrieved February 14, 2012, from The Guardian: <http://www.guardian.co.uk/education/2012/jan/15/free-schools-creationism-intelligent-design>
- Dowley, T. (1990). *The History of Christianity*. (T. Dowley, Ed.) Oxford: Lion Hudson.
- Down, M. (2007). *Deluded by Darwinism: Intelligent Design, evolution and God*. Eastbourne: David C.Cook.

- Edis, T. (2008). Modern Science and Conservative Islam: An Uneasy Relationship 18, pp. 885-903. *Science and Education*, 18, 885-903.
- Edis, T. (2008). Modern Science and Conservative Islam: an uneasy relationship. *Science and Education*, 18, 885-903.
- Elwood, S and Martin, D. (2000). 'Placing' Interviews: Location and Scales of Power in Qualitative Research. *The Professional Geographer* , 52 (4), 649-657.
- Eriksen, T. (2007). *The cartoon controversy and the possibility of cosmopolitanism*. Retrieved 10 15, 2010, from Available online at: <http://folk.uio.no/geirthe/Cosmopolitanism.pdf> Accessed on: 15.10.2010.
- Esposito, J.L. and Mogahed, D. (2007). *Who Speaks for Islam? What a Billion Muslims Really Think*. New York: Avenue Press.
- Evolution. (1998). *The New Encyclopædia Britannica*, p. 855.
- Fakhry, M. (1983). *A History of Islamic Philosophy*. New York: Columbia University Press.
- Falagas, M.E., Zarkadoulia, E.A., Samonis, G. (2006). Arab Science in the Golden Age (750-1258 C.E.) and Today. *The FASB Journal* , 20, 1581-1586.
- Faruqi, Y. (2007). Islamic View of Nature and Values: Could these the Answer to Building Bridges between Modern Science and Islamic Science? *International Journal of Education* , 8 (2), 461-469.
- Flynn, B. (2006). *Piety & Politics: The right-wing assault on religious freedom*. New York: Three Rivers Press.
- Foster, C. (2009). *The Selfless Gene*. London: Hodder & Stoughton.
- Foucault, M. (1977). *Discipline and punish: The birth of the prison*. (A. Sheridan, Trans.) London: Penguin Books.
- Fowler, T.B and Kuebler, D. (2007). *The Evolution Controversy: A survey of competing theories*. Grand Rapids, MI: Baker Academic.
- Frean, A. (2008, November 7). *Put creationism on a par with evolution, say third of teachers*. Retrieved August 28, 2009, from TimesOnline: [http://www.timesonline.co.uk/tol/life\\_and\\_style/education/article5102059.ece](http://www.timesonline.co.uk/tol/life_and_style/education/article5102059.ece)
- Fukuyama, F. (1992). *The End of History and the Last Man*. London: The Free Press.
- Fuller, S. (2008). *Dissent over Descent: Intelligent design's challenge to Darwinism*. Cambridge: Icon Books.
- Gadamer, H. (1981). *Truth and Method*. London: Sheed & Ward.
- Gould, S. (1999). *Rocks of Ages: Science and Religion in the Fullness of Life*. London: Vintage.
- Grant, J. (2007). *Corrupted Science: Fraud, ideology and politics in science*. Surrey: AAPPLL Artists and Phtotgrapher's Press Ltd.



- Gribbin, J. & White, M. (1997). *Darwin: A Life in Science*. London: Simon & Schuster.
- Griffiths, D. (2002). *Somali and Kurdish refugees in London: New identities in the diaspora*. Aldershot: Ashgate.
- Guessom, N. (2008). The Qur'an, Science, and the (Re)altd Contemporary Muslim Discourse. *Zygon*, 43 (2), 411-431.
- Gyekye, K. (1997). *Tradition and Modernity: Philosophical Reflections and the African Experience*. Oxford: Oxford University Press.
- Hameed, S. (2008). Bracing for Islamic Creationism. *Science and Religion*, 322, 1637-1638.
- Hammersley, M. and Atkinson, P. (2007). *Ethnography*. New York: Routledge.
- Harrison, V. (2007). *Religion and Modern Thought*. London: SCM Press.
- Haught, J. F. (2008). *God and the New Atheism: A Critical Response to Dawkins, Harris, and Hitchens*. Louisville and London: Westminster John Knox Press.
- Henderson, M. (2009, August 22). *Professor Richard Dawkins wants to convert Islamic world to evolution*. *TimesOnline*. Retrieved September 10, 2010, from TimesOnline: [http://entertainment.timesonline.co.uk/tol/arts\\_and\\_entertainment/books/article6805889.ece](http://entertainment.timesonline.co.uk/tol/arts_and_entertainment/books/article6805889.ece)
- Herriot, P. (2009). *Religious Fundamentalism: Global, Local and Personal*. London: Routledge.
- Hopkins, G. (2010). A changing sense of Somaliness: Somali women in London and Toronto. *Gender, Place & Culture*, 17 (4), 519-538.
- Hume, D. (1967/1739). Introduction to a Treatise of Human Nature. (N. Capaldi, Ed.) *The Enlightenment*, 85-89.
- Huntington, S. (1996). *The Clash of Civilizations and the Remaking of World Order*. London: Simon & Schuster.
- Huntington, S. (2004). *Who are we? The great American debate*. London: The Free Press.
- Influencing the National Curriculum*. (2007). Retrieved July 2011, from British Centre for Science Education: <http://www.bcseweb.org.uk/index.php/Main/NationalCurriculum>.
- Isaac, M. (2007). *The Counter-Creationism Handbook*. Berkeley: University of California Press.
- Jackson, R. (2004). *Rethinking Religious Education and Plurality*. London: RoutledgeFalmer.
- Jahoda, G. (2002). The Ghosts in the Meme Machine. *History of the Human Sciences*. 15 (2), 55-68.
- Jones, T & Ereira, A. (1994). *Crusades*. London: Penguin.
- Kapelrud, K. (2000). *Evolusjon – Opplest og Vedtatt? Kan Vi Stole på Darwins Teorier*. Oslo: Lunde.

- Karabell, Z. (2007). *People of the Book: The Forgotten History of Islam and the West*. London . London: John Murray Publishers.
- Keddie, N. (1983). *An Islamic Response to Imperialism: Political and Religious Writings of Sayyid Jamal ad-Din al-Afghani* . Los Angeles: University of California Press.
- Keller, S. N. (1996, July 14). *Islam and Evolution*. Retrieved August 1, 2011, from Masu.co.uk: <http://www.masud.co.uk/ISLAM/nuh/evolve.html>.
- Kemp, S. (2005). Critical Realism and the Limits of Philosophy. *European Journal of Social Theory* , 8 (2), 171-191.
- Khaldun, I. (1980). *The Muqaddimah* (Vol. 1). (F. Rosenthal, Trans.)
- Khan, M. (2008). *God Arises: Evidence of God in Nature and Science*. New Delhi: Goodword Books.
- Khan, S and Jones, A. (2004). *Somalis in Camden: Challenges faced by an emerging community, London Borough of Camden*. Retrieved 10 11, 2010, from London Borough of Camden: <http://www.camden.gov.uk/ccm/content/community-and-living/your-local-community/somalis-in-camden.en>
- Klegg, S. (2005). Evidence-based practice in educational research: a critical realist critique of systematic review. *British Journal of Sociology of Education*. 26 (3), 415-428.
- Kvale, S. and Brinkman, S. (2006). *InterViews: Learning the Craft of Qualitative Research Interviewing*. London: Sage.
- Küng, H. (2007). *Islam: Past, Present and Future*. Oxford: Oneworld Publications.
- Köse, A. (1999). The Journey from the Secular to the Sacred: Experiences of Native British Converts to Islam. *Social Compass*, 46 (3), 301-312.
- Lambert, K. (2006). Fuller's Folly, Kuhnian Paradigms, and Intelligent Design. *Social Studies of Science* , 36 (6), 835-842.
- Lennox, J. (2007). *God's Undertaker: Has science buried God?* Oxford: Lion.
- Levinas, E. (1979). *Totality and Infinity*. The Hague: Martinus Nijhoff Publishers.
- Lewis, I. (1965). *A Modern history of Somalia: Nation and state in the Horn of Africa*. London: Weidenfeld and Nicholson.
- Lewis, I. (1994). *Blood and bone: The call of kinship in Somali society*. The Red Sea Press: New JerseyThe Red Sea Press.
- Lewis, P. (2007). *Young, British and Muslim. London*. London: Continuum.
- Lie-Svendsen, Ø and Rees, M.H. (1996). Helium escape from the terrestrial atmosphere – the ion outflow mechanism. *Journal of Geophysical Research*, 101, 2435-2443.

- Lindberg, D. C., & Numbers, R. L. (2003). *When Science and Christianity Meet*. Chicago: The University of Chicago Press.
- Loo, S. (2001). Islam, Science and Science Education: Conflict or Concord? . *Studies in Science Education*, 36 (1), 45-77.
- Lumbard, J. (2004). *Islam, Fundamentalism, and the Betrayal of Tradition*. (Lumbard, Ed.) Indiana: World Wisdom Inc.
- MacCulloch, D. (2009). *A History of Christianity*. London: Penguin Books.
- Macrae, F. (2008, August 4). *Atheist Richard Dawkins blames Muslims for 'importing creationism' into classrooms*. Retrieved September 10, 2010, from MailOnline: <http://forums.islamicawakening.com/fl18/atheist-richard-dawkins-blames-muslims-importing-creationism-into-classroom-14773/> .
- Malinowski, B. (1961). *Argonauts of the Western Pacific*. USA: E.P. Dutton, Inc.
- Marley, D. (2011, May 20). *Creationist groups banished from free schools*. Retrieved July 10, 2011, from TES: [/www.tes.co.uk/article.aspx?storycode=6082592](http://www.tes.co.uk/article.aspx?storycode=6082592).
- Marley, D. (2011, May 27). *Gove banishes creationist groups from free schools*. Retrieved August 9, 2011, from TES: <http://www.tes.co.uk/article.aspx?storycode=6086004>.
- Masood, E. (2007). An Islamist Revolution. *Nature* , 444 (2), 22-25.
- Masood, E. (2009). *Science and Islam*. London: Icon Books Ltd.
- Mautner, T. (2004). *Dictionary of Philosophy*. London: Penguin Books.
- McGrath, A. (2007). *Dawkins' God: Genes, Memes, and the Meaning of Life*. Oxford: Blackwell Publishing.
- McGrath, A. (2004). *The Twilight of Atheism: The Rise and Fall of Disbelief in the Modern World*. London: Rider.
- McGuire, M. (2002). *Religion: The Social Context* (5th ed.). Belmont, CA: Wadsworth Group.
- McLeod, J. (2001). *Qualitative Research in Counselling and Psycho-therapy*. London: Sage.
- Meer, N. (2009). Identity articulations, mobilization, and autonomy in the movement for Muslims schools in Britain. *Race Ethnicity and Education*, 12 (3), 379-399.
- Midgley, M. (1985). *Evolution as Religion*. London and New York: Routledge.
- Mishler, E. (1986). *Research interviewing: Context and narrative*. Cambridge, MA: Harvard University Press.
- Morries, H. (1985). *Scientific Creationism*. Green Forest, AR: Master Books.
- Morris, H. (1976). *The Genesis Record: A Scientific & Devotional Commentary on the Book of Beginnings*. Grand Rapids: Baker Book House.

Moulin, D. (2009). "A Too Liberal Religious Education? A thought experiment for teachers and theorists". *British Journal of Religious Education*, 153-165.

*Muslim medical students boycotting lectures on evolution... because it 'clashes with the Koran'.* (2011, November 28). Retrieved April 31, 2012, from MailOnline:  
<http://www.dailymail.co.uk/news/article-2066795/Muslim-students-walking-lectures-Darwinism-clashes-Koran.html>.

*Muslim medical students boycotting lectures on evolution... because it 'clashes with the Koran'.* (2011, November 28). Retrieved April 20, 2012, from MailOnline:  
<http://www.dailymail.co.uk/news/article-2066795/Muslim-students-walking-lectures-Darwinism-clashes-Koran.html>.

Naik, Z. (2007). *The Qur'an and Modern Science: Compatible or incompatible?* Riyadh: Daussalam.

Najjar, I. (2001). *Faith and Reason in Islam: Averroes' Exposition of Religious Arguments.* Oxford: One World. Oxford: One World.

Nasr, S. (1999). *A Young Muslim's Guide to the Modern World.* Cambridge: The Islamic Texts Society.

Nipkow, K. (2003). *God, Human Nature and Education for Peace: New Approaches to Moral and Religious Maturity.* Ashgate. Aldershot, Hants: Ashgate.

Nukunya, G. (2003). *Tradition and Change in Ghana.* Accra: Ghana University Press.

Olson, R. (1999). *The Story of Christian Theology: Twenty Centuries of Tradition & Reform.* Illinois: InterVarsity Press.

Paley, W. (1818). *Natural Theology; or Evidences of the Existence and Attributes of the Deity* (18 ed.). Edinburgh: Lackington, Allen and Co., And James Sawers.

Patomaki, H and Wight, C. (2000). After Postpositivism? The Promises of Critical Realism. *International Studies Quarterly*, 44 (2), 213-237.

Percival, R. (1994). Dawkins and Incurable Mind Viruses? Memes, Rationality and Evolution. *Journal of Social and Evolutionary Systems*, 17 (3), 243-286.

Peters, T. & Hewlett, M. (2006). *Can You Believe in God and Evolution? A Guide for the Perplexed.* Nashville: Abingdon Press.

Philips, A. (2004). *The Fundamentals of Tawheed: Islamic Monotheism.* Birmingham: Al-Hidaayah Publishing and Distribution.

Pieper, M. (1989). The Heuristic Paradigm: A Unifying and Comprehensive Approach to Social Work Research. *Smith College Studies in Social Work*, 60 (1), 8-34.

Polkinghorne, J. (1988). *Science and Creation: The Search for Understanding*. London & Philadelphia: Templeton Foundation Press.

QCA. (2000). *Science in the National Curriculum, Qualifications and Curriculum Authority, Key Stage 4, 1b*. QCA.

QCA. (2006). *Science in the National Curriculum, Qualifications and Curriculum Authority, Key Stage 4, 5b*. Retrieved July 2011, from [http://curriculum.qcda.gov.uk/uploads/QCA-07-3345-p\\_Science\\_KS4\\_tcm8-1799.pdf](http://curriculum.qcda.gov.uk/uploads/QCA-07-3345-p_Science_KS4_tcm8-1799.pdf)

Quinn, P. L., & Taliaferro, C. (Eds.). (1997). *A Companion to the Philosophy of Religion*. Oxford: Blackwell Publishing.

Qureshi, H. (2004). Evidence in Policy and Practice: What Kinds of Research Designs? *Journal of Social Work, 41*, 7-23.

Qutb, S. (1981). *Milestones along the Way*. New Delhi: Markazi Maktaba Islami.

Ramadan, T. (2009). *Radical Reform: Islamic Ethics and Liberation*. Oxford: Oxford University Press.

Rawls, J. (1971). *A Theory of Justice*. Harvard: Harvard University Press.

Reddie, R. (2009). *Black Muslims in Britain*. Oxford: Lion Hudson.

Reiss, M.J and Jones, L.S. (2007). *Teaching about Science Origins: taking account of creationism*. New York: Peter Lang Publishing, Inc.

Richards, L. (2009). *Handling Qualitative Data: A Practical Guide*. London: Sage.

Roberts, J. (2003). After Postmodernism: An Introduction to Critical Realism. (J. López, & G. Potter, Eds.) *Sociology*, 37 (2).

Roulston, K. (2010). Considering quality in qualitative interviewing. *Qualitative Research*, 10, 198-228.

Rubin, H.J and Rubin, I.S. (2005). *Qualitative interviewing: the art of hearing data*. Thousand Oaks, CA: Sage.

Ruse, M. (1998). Darwinism and Atheism: Different Sides of the Same Coin? *Elsevier Science Lt. Endeavour*, 22 (1), 17-20.

Ryan, L, Kofman, E and Aaron, P. (2010). Insiders and outsiders: working with peer researchers in researching Muslim communities. *International Journal of Social Research Methodology*, 1-12.

Said, E. (1978). *Orientalism*. New York: Vintage Books.

Sardar, Z. (2007). Beyond the troubled relationship. *Nature*, 448 (12), 131-132.

Sarfati, J. (2005). *Refuting Evolution: A handbook for students, parents, and teachers countering the latest arguments for evolution*. Green Forest, AR: Master Books.

Sayer, A. (1992). *Method in social science*. London: Routledge.

- Scott, D. (2005). Critical Realism and Empirical Research Methods in Education. *Journal of Philosophy of Education*, 39 (4), 633-646.
- Scott, D. (2007). Resolving the quantitative-qualitative dilemma: a critical realist approach. *International Journal of Research & Method in Education*. 30 (1), 3 – 17.
- Scott, E.C. (2004). *Evolution vs. Creationism: An Introduction*. London: University of California Press, Ltd.
- Scott, E.C. and Branch, G. (2006). *Not in our Classrooms: Why Intelligent Design is wrong for our schools*. Boston: Beacon Press.
- Sen, A. (2006). *Identity and Violence: The Illusion of Destiny*. London: Penguin Books.
- Shanavas, T. (2005). *Creation and/or Evolution: An Islamic Perspective*. Philadelphia : Xlibris.
- Sharia Law in UK is "unavoidable"* . (2008, February 7). Retrieved March 19, 2012, from BBC News: <http://news.bbc.co.uk/1/hi/7232661.stm>
- Shepherd, J. (2007, June 12). *'Imams are not the solution to terrorism'*. Retrieved April 20, 2012, from The Guardian: <http://www.guardian.co.uk/education/2007/jun/12/highereducation.uk>
- Skinner, G. (2002). Religious pluralism and school provision in Britain. *Intercultural Education*, 13, 171-181.
- Smock, D. (Ed.). (2002). *Interfaith Dialogue and Peace building*. Washington D.C.: Institute of Peace Press.
- Spencer, N. (2009, July 3). *Darwin's doubters*. Retrieved September 10, 2009, from The Guardian: <http://www.guardian.co.uk/commentisfree/belief/2009/jul/03/darwin-creationism-evolution-islam>
- Steinmetz, G. (1998). Critical Realism and Historical Sociology: A Review. *Comparative Studies in Society and History* , 40 (1), 170-186.
- Sterelny, K. (2007). *Dawkins Vs. Gould: The Survival of the Fittest*. Cambridge: Icon Books.
- Stern, J. (2006). *Teaching Religious Education*. . London: Continuum International Publishing Group.
- Sue, D and Sue, D. (2003). *Counselling the culturally diverse: Theory and practice* (4th ed.). New York: Wiley.
- Swinton, J and Mowat, H. (2006). *Practical Theology and Qualitative Research*. London: SCM Press. London: SCM Press.
- Taylor, P. (2008, April 21). *English Schools Now Teach Evolution as Fact*. Retrieved July 10, 2011, from Answers in Genesis: <http://www.answersingenesis.org/articles/2008/04/21/teach-evolution-as-fact>
- Teachernet.gov.uk. (2006). *Guidance on the place of creationism and intelligent design in science classes*. Retrieved February 11, 2012, from The National Archives:

<http://tna.europarchive.org/20080108005442/http://www.teachernet.gov.uk/docbank/index.cfm?id=11890>

Telegraph.co.uk. (2009, 17 November). *Muslim scholars rejecting Darwin's theory of evolution as 'unproven'*. Retrieved 10 09, 2010, from <http://www.telegraph.co.uk/science/evolution/6587642/Muslim-scholars-rejecting-Darwins-theory-of-evolution-as-unproven.html>

Tibi, B. (2009). *Islam's Predicament with Modernity: Religious Reform and Cultural Change*. London: Routledge.

Turner, H. (1995). *Science in Medieval Islam*. Austin: University of Texas Press.

Van Manen, M. (1990). *Researching Lived Experience: Human Science for an Action Sensitive Pedagogy*. New York: State University of New York Press.

Vogt, P. (1997). *Tolerance & Education*. London: Sage.

Walter, A. (2007). The Trouble with Memes: Deconstructing Dawkins's Monster. *Social Science Information*, 46 (4), 691-704.

Warburton, N. (2006). *Philosophy: The Classics*. New York: Routledge.

Ward, K. (2006). *Pascal's Fire: Scientific Faith and Religious Understanding*. Oxford: Oneword Publications.

Ward, K. (2008). *The Big Questions in Science and Religion*. Pennsylvania: Templeton Foundation Press.

Whitehead, N. (2009, February 20). *Islamic fundamentalism promoted on websites at some Muslim schools in the UK, think tank finds*. Retrieved October 11, 2010, from TelegraphOnline: <http://www.telegraph.co.uk/education/educationnews/4699505/Islamic-fundamentalism-promoted-on-websites-at-some-Muslim-schools-in-the-UK-think-tank-finds.html>

Yahya, H. (1999). *The Evolution Deceit: The Scientific Collapse of Darwinism and its Ideological Background*. London: Ta-Ha Publishers Ltd.

Yaran, C. (2007). *Understanding Islam. Edinburgh*. Edinburgh: Dunedin Academic Press.

Ziadat, A. (1986). *Western Science in the Arab World*. London: MacMillan Press.

## Appendices

### APPENDIX A: LETTER TO MUSLIM REPRESENTATIVES.

King's College Research Ethics Committee Ref: SSHL/10/11-18

Dear Sir/Madam,

I am currently enrolled as a 2<sup>nd</sup> year PhD student with King's College London. The title of my dissertation is "The Creation-Evolution Debate from an Islamic Perspective". As you may be aware, last year was Darwin's bicentennial and the 150<sup>th</sup> anniversary of the publication of *The Origin of the Species* (1859). The general aim of this study is to gain some insight into the worldview of Muslims and the manner in which this informs the creation-evolution debate. Specifically, I will explore the opinions of Muslim representatives and Muslims who have studied the theory of evolution in UK schools as taught in Key Stage 4 and above. Furthermore, I will seek to understand the manner in which an Islamic worldview (*Tawhid*) influences relevant offshoots such as the role of reason, democratic notions such as separation between church and state and the relation between science and faith. It is hoped this study will help inform how Muslims reconcile their creationist views with the theory of evolution. In a broader sense, this study can be perceived as an invitation for a dialogue between "worldviews" by stimulating Muslims to reflect on areas of convergence and divergence.

As representatives of the Muslim community, I would appreciate it if you would agree to an interview where the themes above are covered. If you agree to participate, I will provide you with an information sheet and a consent form. I will be happy to meet you in the Mosque or a public place most convenient for you. I kindly request your help in identifying students aged 14 and above along with their others (fulfilling the criteria below) who might be interested in participating. The criteria for participants is as follows:

- For purposes of this study, and as the title suggests, only Muslims who believe in divine creation as expounded by the Muslim faith will be considered.
- In addition, they are expected to be practising Muslims to some degree. In practical terms this means Muslims who subscribe to the 5 Pillars of Islam.
- The participants must agree to participate in the research.
- Participants must have studied in the UK (Key Stage 4).
- I would like to interview an equal number of males and females. In keeping with the religious and cultural sensibilities, I am flexible in regards to alternative suggestions (e.g. the presence of a male relative or meeting in a public place).

For each participant, I will send you an envelope with an information sheet and a consent form which can be hand-delivered in the mosque. I am fully aware of the additional work this entails for you and all I can hope for is goodwill and a shared understanding that this is a useful undertaking. I will welcome your suggestions and feedback throughout the duration of the project. I would also be happy to give you a copy of the final report. If you so require, the contact details of my supervisor is found on the right-hand below.

Thank you for reading this letter. Please do not hesitate to contact me using the details below.

Yours Sincerely,

Paul Thomas  
[Paul.thomas@kcl.ac.uk](mailto:Paul.thomas@kcl.ac.uk)  
02082201308

**Project supervisor**  
Philip Barnes MA, MTh, PhD (Dublin),  
Reader in Religious and Theological Education  
Department of Education and Professional Studies,



## APPENDIX B: INFORMATION SHEET FOR MUSLIM PARTICIPANTS

REC Reference Number: **SSHL/10/11-18**

### YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

**TITLE OF STUDY:** THE CREATION-EVOLUTION DEBATE: AN ISLAMIC PERSPECTIVE. I would like to invite you to participate in this PhD research project. You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

**Aims of the research project:** The general aim of this study is to gain some insight into the worldview of Muslims and the manner in which this informs the creation-evolution debate. It is hoped the study will shed some light on the manner in which Muslim students reconcile their religious understanding of human origins with that of evolution.

**Inclusion and exclusion criteria:** The views of Muslim s who have studied Darwinian evolution in secondary school (key stage 4) and above will be central to the study. As the title suggests, only those participants who believe in Islamic creationism can participate. For purposes of this study, this means those who believe that Allah decreed the world and all living things into existence by divine fiat (command). As a minimum, the participants must subscribe to the 5 Pillars of Islam in order for the study to have credibility as representing Muslim opinion.

**What will happen if I take part?** If you decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. As you may receive this information sheet from your Imam or teacher, Mosque or school premises will be used, subject to permission. Where this is not possible, some other public space will be sought. It is expected that the average interview will last between 30-45 minutes. Interviews will be recorded, subject to your permission. Recordings of interviews will be deleted upon transcription. It is up to you to decide whether to take part or not. If you decide to take part you are still free to withdraw at any time and without giving a reason.

**Potential benefits:** For participants this will be an opportunity to reflect on a major debate of our time when the relationship between science and religion is being seriously interrogated. A copy of the final report will also be offered to participants who so wish.

**Will my personal data be kept confidential?** All your responses are given anonymously and cannot be traced back to you in any way. Your confidentiality will be ensured at all times and you will not be identified in any publication. Information retrieved for the purpose of the study will be stored anonymously for one year after the completion of the study. Only anonymized data will be stored and made available for other researchers. In addition to withdrawing yourself from the study, you may also withdraw any data/information you have already provided up until it is transcribed for use in the final report (October, 2011).

If this study has harmed you in any way you can contact King's College London using the details below for further advice and information:

**Researcher:**  
Paul Thomas  
[Paul.thomas@kcl.ac.uk](mailto:Paul.thomas@kcl.ac.uk)

**Supervisor**  
Philip Barnes MA, MTh, PhD (Dublin),  
Reader in Religious and Theological Education

## APPENDIX C: CONSENT FORM FOR PARTICIPANTS IN RESEARCH STUDIES

Please complete this form after you have read the Information Sheet and/or listened to an explanation about the research.

Title of Study: THE CREATION-EVOLUTION DEBATE: AN ISLAMIC PERSPECTIVE

King's College Research Ethics Committee Ref: SSHL/10/11-18

Thank you for considering taking part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions arising from the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this Consent Form to keep and refer to at any time.

Please tick  
or initial

- I understand that if I decide at any time during the research that I no longer wish to participate in this project, I can the researchers involved and withdraw from it immediately without giving any reason. Furthermore, I understand that I will be able to withdraw my data up to the point of publication *[OR insert date if stated on Information Sheet]*. ☐
- I consent to the processing of my personal information for the purposes explained to me. I understand that such information will be handled in accordance with the terms of the Data Protection Act 1998. ☐

Participant's Statement:

I \_\_\_\_\_

agree that the research project named above has been explained to me to my satisfaction and I agree to take part in the study. I have read both the notes written above and the Information Sheet about the project, and understand what the research study involves.

Signed

Date

DELETE IF NOT APPROPRIATE

Investigator's Statement:

I \_\_\_\_\_

Confirm that I have carefully explained the nature, demands and any foreseeable risks (where applicable) of the proposed research to the participant.

**APPENDIX D INTERVIEW GUIDE**

King's College Research Ethics Committee Ref: SSHL/10/11-18

**1. EVOLUTION AND EDUCATION**

- a) How would you explain your understanding of the teaching of evolution? (a theory?)
- b) Muslim States like Saudi Arabia and Sudan have banned evolution whereas evolution is taught in Egypt. Do you support or oppose the teaching of evolution as scientific fact in school? Why or why not?
- c) Should the teaching of evolution and creationism be given equal time in the science classroom?
- d) In 2006, the government prepared a pamphlet called "Guidance on Creationism" where the statement, "There is scope for schools to discuss creationism as part of Religious Education..." appears. Is the religious education arena the appropriate forum for such a debate?
- e) Harun Yahya, a prominent Turkish-Muslim creationist, actively collaborates with American creationist-Christians to undermine evolution in public education. Would you welcome or oppose such efforts in the UK?
- f) As a person of a religious persuasion, has your understanding of evolution in any way influenced your choice of career?
- g) Some creationists in the USA have opted for alternative forms of schooling (e.g. Christian schools or home-schooling) in protest against evolution, among others. Given the opportunity, would you have opted for similar alternatives (e.g. Muslim faith school) in the UK?

**2. SCIENCE AND RELIGION**

- a) What would you say has shaped your understanding of the issue of origins?
- b) How do you reconcile scientific advances that challenge or contradict the Qur'an, for example?
- c) As a Muslim, do you believe that Allah could have employed the agency of evolution to bring about life?
- d) Unlike creationist Christians, Muslims embrace the Big Bang. However, some scientists, such as Stephen Hawking, have stated that the laws of physics sparked creation without the need to invoke God. How would you respond to this?
- e) Do you see science and religion as complementary or locked in a conflict?
- f) The Islamic doctrine of *Tawhid* or unity of God demands an approach which sees the world as a united whole emanating and dependent on Allah. How can a Muslim reconcile this with the demands of science for autonomy and separation?

**3. EVOLUTION AND IDEOLOGY**

- a) Some people of a religious persuasion reject evolution on the grounds that it promotes atheism. Harun Yahya (1999:16), for example, claims that Darwin invited people to abandon their religious beliefs by denying the creation. How would you respond to this?
- b) The phrase “survival of the fittest” has been taken by some religious people to imply might makes right. Do you see evolution as condoning such an ideology?
- c) Do you see any link between the theory of evolution and race ideology?

## APPENDIX E GUIDANCE ON THE PLACE OF CREATIONISM AND INTELLIGENT DESIGN IN SCIENCE LESSONS. The National Curriculum

The National Curriculum secures for all pupils, irrespective of background and ability, an entitlement to a range of areas of learning. Its aim is to develop knowledge, understanding, skills and attitudes necessary for each pupil's self-fulfilment and development as an active and responsible citizen. It makes expectations for learning and attainment explicit to pupils, parents, teachers, governors, employers and the public, and establishes national standards for the performance of all pupils. The National Curriculum provides the framework of what should be taught in a particular subject. It does not state how subjects should be taught and schools are free to add additional material to it when developing their school curriculum (for example some schools choose to teach Astronomy at GCSE in addition to other science GCSEs).

**Science in the curriculum** Science is a core subject of the National Curriculum throughout every key stage. The science programmes of study set out the legal requirements of the science National Curriculum. They focus on the nature of science as a subject discipline, including what constitutes scientific evidence and how this is established. Students learn about scientific theories as established bodies of scientific knowledge with extensive supporting evidence. Hypotheses are developed on the basis of the body of knowledge and are tested experimentally to generate further evidence that may be supportive or contradictory. Experimental work can then be used to generate further evidence in order to test new hypotheses based on these bodies of scientific knowledge. The role of the scientific community in evaluating and validating new work is also included as is the nature of, and evidence for, evolution.

### Religious Education in the curriculum

Religious Education (RE) is a component of the basic curriculum, to be taught alongside the National Curriculum in all maintained schools. There is scope for young people to discuss beliefs about the origins of the Earth and living things in RE. The DfES and QCA have published a non-statutory national framework for RE and supporting teaching units which include the unit ‘How can we answer questions about creation and origins?’ The unit focuses on creation and the origins of the universe and human life, as well as the relationships between religion and science. Students have opportunities within RE lessons to discuss, explore, question and evaluate these relationships. The unit can be downloaded from <http://www.qca.org.uk>.

### Scientific theories

The use of the word ‘theory’ can mislead those not familiar with science as a subject discipline because it is different from the everyday meaning of being little more than a ‘hunch’. In science the meaning is much less tentative and indicates that there is a substantial amount of supporting evidence, underpinned by principles and explanations accepted by the international scientific community. However, it also signals that all scientific knowledge is considered to be provisional as it can be overturned by new evidence if this is validated and accepted by the scientific community.

Creationism and intelligent design are sometimes claimed to be scientific theories. This is not the case as they have no underpinning scientific principles, or explanations, and are not accepted by the science community as a whole. Creationism and intelligent design therefore do not form part of the science National Curriculum programmes of study.

### What is appropriate to teach in science lessons?

The nature of, and evidence for, evolution must be taught at key stage 4 as these are part of the programme of study for science. Key stages 1, 2 and 3 include topics such as variation, classification and inheritance which lay the foundations for developing an understanding of evolution at key stage 4 and post-16.

The nature of science as a subject discipline must also be taught, as described in Sc1 Scientific enquiry at key stages 1 and 2 and how science works at key stages 3 and 4.

Creationism and intelligent design are not part of the science National Curriculum programmes of study and should not be taught as science. However, there is a real difference between teaching 'x' and teaching *about* 'x'. Any questions about creationism and intelligent design which arise in science lessons, for example as a result of media coverage, could provide the opportunity to explain or explore why they are not considered to be scientific theories and, in the right context, why evolution is considered to be a scientific theory.

### **Addressing students' questions about creationism or intelligent design**

Science teachers can respond positively and educationally to questions and comments about creationism or intelligent design by questioning, using prompts such as 'What makes a theory scientific?', and by promoting knowledge and understanding of the scientific consensus around the theories of evolution and the Big Bang.

### **Choosing appropriate resources**

The DCSF does not specify teaching resources. There is a wide variety of resources available for use in schools and teachers are free to use their professional judgement to select appropriate materials for their science lessons. Any resource should be checked carefully before it is used in the classroom. If resources which mention creationism or intelligent design are used, it must be made clear that neither constitutes a scientific theory.

## **FREQUENTLY ASKED QUESTIONS**

### **Is creationism a valid scientific theory?**

'Creationism', a term commonly used as a shorthand for 'young-Earth creationism', is the belief that the Earth and its many species did not gradually come into being over billions of years but were created suddenly and within the last 10,000 years. This proposed timescale can be investigated scientifically with the scientific evidence indicating a much older Earth (between 4,000 and 5,000 million years). The existence of a 'creator' is not scientifically testable.

### **Is a belief in creation the same thing as 'creationism'?**

Belief that God created everything that exists is shared by Christians, Jews, Muslims and many others all over the world. Many of the founders of modern science, as well as contemporary scientists, have held and do hold this belief, one 'that science cannot address' since it is religious/metaphysical. In view of this, in the interest of good science education, it is important that science teachers do not assert or imply that science contradicts traditional beliefs in creation and design. To the belief in creation, creationists have added the belief that the Earth is geologically young, although this is not supported by mainstream science.

### **Is intelligent design a valid scientific theory?**

The intelligent design movement claims there are aspects of the natural world that are so intricate and fit for purpose that they cannot have evolved but must have been created by an 'intelligent designer'. Furthermore they assert that this claim is scientifically testable and should therefore be taught in science lessons. Intelligent design lies wholly outside of science. Sometimes examples are quoted that are said to require an 'intelligent designer'. However, many of these

have subsequently been shown to have a scientific explanation, for example, the immune system and blood clotting mechanisms.

Attempts to establish an idea of the 'specified complexity' needed for intelligent design are surrounded by complex mathematics. Despite this, the idea seems to be essentially a modern version of the old idea of the "God-of-the-gaps". Lack of a satisfactory scientific explanation of some phenomena (a 'gap' in scientific knowledge) is claimed to be evidence of an intelligent designer.

### **Should time be given to creationism and intelligent design in science lessons?**

The theory of evolution lies at the heart of biology and should be taught at key stage 4 and in GCE advanced level biology. Creationism and intelligent design are not scientific theories and do not form part of the science National Curriculum or the GCSE and GCE A level subject criteria. There may be situations in which it is appropriate for science teachers to respond to student comments or enquiries about the claims of creationism or intelligent design. This would be to establish why they are not considered as scientific theories as described above in 'What is appropriate to teach in science lessons'. One way to do this would be to consider the mechanisms by which new scientific knowledge becomes established and why creationism and intelligent design do not meet these requirements.

If questions or issues about creationism and intelligent design arise during science lessons they can be used to illustrate a number of aspects of how science works. Such aspects include: 'how interpretation of data, using creative thought, provides evidence to test ideas and develop theories'; 'that there are some questions that science cannot currently answer, and some that science cannot address'; 'how uncertainties in scientific knowledge and scientific ideas change over time and about the role of the scientific community in validating these changes'.

### **Which subject should deal with creationism and intelligent design?**

Teachers of subjects such as RE, history or citizenship may deal with creationism and intelligent design in their lessons. If such issues were to arise there might be value in science colleagues working with these teachers in addressing them.

### **Should I use resources about creationism and intelligent design that are sent to my school?**

Decisions about which resources to use rest with schools and teachers. Organisations promoting creationism and intelligent design quite often provide resources for schools; these may include paper-based activities, leaflets, DVDs, CDs, music, workshops, other activities and web resources. While these resources may be used, it must be remembered that they do not support the science National Curriculum and they present a particular minority viewpoint that is not underpinned by scientific principles and evidence.

### **What about students who hold creationist beliefs or believe in the arguments of intelligent design?**

Some students do hold creationist beliefs or believe in the arguments of the intelligent design movement and/or have parents/carers who accept such views. If either is brought up in a science lesson it should be handled in a way that is respectful of students' views, religious and otherwise, whilst clearly giving the message that the theory of evolution and the notion of an old Earth / universe are supported by a mass of evidence and fully accepted by the scientific community.

## **GLOSSARY OF TERMS**

**Creation:** theologically, God's purposeful act of bringing and holding the universe in being. This traditional belief in divine, designed action is shared by Jews, Christians, Muslims and others.

**Creationism:** a term commonly used as shorthand for its most common variant, 'young-Earth creationism'. As well as a belief in creation, it includes the additional belief that creation occurred by specific, non-natural divine events in six 'days' some 6000-10,000 years ago, rather than by God's creative actions through the natural processes of stellar, chemical and biological evolution.

**Design:** purposeful planning behind an object or action.

God-of-the-gaps: the name given to the practice of substituting an explanation of *agency* [in this case God] into current gaps in our scientific understanding, where what is needed is an explanation of the *mechanisms* [i.e. a scientific explanation]. It is not part of science teaching - and cannot be philosophically justified - to 'plug God in' to gaps awaiting a scientific explanation. Although the two types of explanation are logically compatible, they are not interchangeable.

**Intelligent Design:** the belief (held by members of a movement starting in the early 1990s) that certain biological features are too complex to be explained by the theory of evolution and therefore point to 'intelligence'.

**Irreducible complexity:** a structure is claimed to be irreducibly complex if it could not have originated by natural processes; this claim is made for any biological system consisting of many interacting parts in which the absence of any one part means that the whole system does not function. Two examples which have been frequently quoted are the mammalian eye and the bacterial flagellum. Plausible mechanisms by which both could have evolved have now been described<sup>6</sup>.

**Origins:** a word commonly used for the processes by which the universe, life and humankind originated. Such processes as stellar, chemical and biological evolution are the province of science, and need to be distinguished from the theological concept of an act of creation.

**Science:** the systematic study of the origins, structure and behaviour of the physical/natural world through observation, theorising and experiment.

**Scientific theory:** a consistent, comprehensive, coherent and extensively evidenced explanation of an aspect of the natural world which can, at least in principle, be tested by observations and/or experiments. Examples are the kinetic theory of gases, continental drift and plate tectonics, biological evolution and quantum theory.

## RESOURCES

There is a wide range of resources and background material on these topics and those in the list below are good starting points.

### Website articles

A page on the website of Christians in Science devoted to sources of information about origins, creation, creationism and intelligent design. It includes a number of links to web pages that are relevant to creationism and ID:

[http://www.cis.org.uk/for\\_members/education/origins.shtml](http://www.cis.org.uk/for_members/education/origins.shtml)

The Interacademy Panel's statement on the teaching of evolution:

<http://www.interacademies.net/Object.File/Master/6/150/Evolution%20statement.pdf>

Further articles may be found on the pages of the Faraday Institute for Science and Religion:

<http://www.st-edmunds.cam.ac.uk/faraday/Papers.php>

### Non-academic books

Ayala, Francisco J (2006) *Darwin and Intelligent Design*, Minneapolis: Fortress Press, ISBN 978-0-8006-3802-3.

Poole, M. W. (2007) *User's Guide to Science and Belief*, Ch 8-10, Oxford: Lion Hudson, ISBN 978-0-7459-5274-1

### Academic books

Jones, L. & Reiss, M. J. (eds) (2007) *Teaching about Scientific Origins: Taking account of creationism*, New York: Peter Lang. Examines the implications of the rise in creationism for school science teaching and presents suggestions for ways forward.

Manson, Neil A (ed) (2003) *God and Design: The teleological argument and modern science*, London: Routledge. Considers the design argument from historical, philosophical, theological, biological and physical perspectives.

---

<sup>6</sup> Howard J van Till, 'Are bacterial flagella intelligently designed?' *Science and Christian Belief* (2003) **15**(2) 117-140.  
Dawkins, R. (1996) *Climbing Mount Improbable*, pp126ff, London: Viking.

